Table of Contents

Acronyms

ASAP	-	Aviation Safety Action Program
ATOS	-	Air Transportation Oversight System
BEA	-	Bureau of Economic Analysis, Department of Commerce
BTS	-	Bureau of Transportation Statistics
DOD	-	Department of Defense
DOT	-	Department of Transportation
CAS	-	Cost Accounting System
CFIT	-	Controlled Flights Into Terrain
CR	-	Compliance Review
EPA	-	Environmental Protection Agency
FAA	-	Federal Aviation Administration
FHWA	-	Federal Highway Administration
FMCSA	-	Federal Motor Carrier Safety Administration
FRA	-	Federal Railroad Administration
FTA	-	Federal Transit Administration
GAO	-	General Accounting Office
GDP	-	Gross Domestic Product
GIS	-	Geographic Information System
GPRA	-	Government Performance and Results Act
GPS	-	Global Positioning System
GT	-	Gross Tons
HazMat	-	Hazardous Materials
HMIS	-	Hazardous Materials Information System
HPMS	-	Highway Performance Monitoring System
IT	-	Information Technology
ITS	-	Intelligent Transportation Systems
MARAD	-	Maritime Administration
NAFTA	-	North American Free Trade Agreement
NASA	-	National Aeronautics and Space Administration
NBI	-	National Bridge Inventory
NHS	-	National Highway System
NHTSA	-	National Highway Traffic Safety Administration
NII	-	National Information Infrastructure
NPRM	-	Notice of Proposed Rulemaking
NPR	-	National Partnership for Reinventing Government
NSC	-	National Security Council
NTSB	-	National Transportation Safety Board
OA	-	Operating Administration
ODAPC	-	Office of Drug and Alcohol Policy and Compliance
OIG	-	Office of Inspector General
ONE DOT	-	Working *better* together at DOT
OST	-	Office of the Secretary
PPI	-	Producer Price Index
PRISM	-	Performance and Registration Stems Management
R&D	-	Research and Development
RSPA	-	Research and Special Programs Administration
SARA	-	Superfund Amendments and Reauthorization Act
SLSDC	-	Saint Lawrence Seaway Development Corporation
STB	-	Surface Transportation Board
TASC	-	Transportation Administrative Service Center
TAWS	-	Terrain Awareness Warning System
TEA21	-	Transportation Equity Act for the 21st Century
TRB	-	Transportation Research Board
USCG	-	United States Coast Guard

1. Introduction

Transportation, at its core, is about more than concrete, asphalt and steel – it is about people and their access to work, school, loved ones, and nature's rich bounty. Under the leadership of President William Jefferson Clinton, Vice President Albert Gore, Jr. and Transportation Secretary Rodney E. Slater, the people of the Department of Transportation (DOT) have redefined transportation beyond the narrow public works definition. We have acknowledged our top transportation priority – safety – while at the same time we have demonstrated our ability to improve mobility, spur the economy, enhance the human and natural environment, and ensure national security.

In this *Strategic Plan*, published in the first year of the new century and the millennium, we will continue to raise the bar of performance ever skyward. Through our update of former Secretary of Transportation William Coleman's *Trends and Choices* report, we have considered how transportation has evolved in the past 25 years. Through our *Policy Architecture*, we are proposing a framework for effective decision-making throughout the transportation enterprise. The future of transportation is about choices, the interlocking web of policies and practices that shape and inform transportation decisions by stakeholders at all levels: governments, trade associations, labor, businesses, consumers and interest groups. Together, the *Strategic Plan*, the *Trends and Choices* update and the *Policy Architecture* will help us achieve excellence in transportation.

The transportation system of the new century will be safe and sustainable to be sure but also international in reach, intermodal in form, intelligent in character and inclusive in service. We will create a climate of innovation to bring such a system into being as we move forward lifted by a visionary spirit, motivated by a ONE DOT sense of creativity and cooperation and propelled by new technologies.

Technology is transforming transportation in revolutionary ways and at breathtaking speed. Great, long historic sweeps of transportation development in the United States have telescoped to months. The evolution from a system dependent on harbors and rivers to a continent joined by great steel rails and iron horses, to a nation joined by ribbons of highways and crisscrossed by soaring jets took two hundred years. Now, in less than half a decade, as we were getting used to just-in-time delivery and its companion problem, empty back-hauls for truckers, an Internet clearinghouse that promises to eliminate the problem has been created. Also disappearing are paper travel tickets, catalog orders, and brick and mortar businesses. They are being replaced by on-line purchases of e-tickets, narrowcast service delivery via the Internet, dot-coms, click and mortar businesses, and near simultaneous computer design and manufacturing for delivery as needed.

This rapid change was unforeseen before the power and freedom offered to everyone through the Internet, from the largest corporation to the single individual was linked with the calculating power of the computer. This technology marriage has

accelerated the rate of change in transportation more than anyone dreamed even five years ago and poses exciting challenges to DOT.

Accepting these challenges, we used a new approach in building this strategic plan. We created global transportation scenarios set 30 years in the future to simulate the interrelated conditions within which DOT could plausibly operate. We conducted multiple visioning sessions and interviewed people in transportation and in disciplines related to transportation to help chart our course. We invited transportation consumers and providers to participate in our strategy sessions and we posted successive drafts of the plan on the Internet to solicit additional comments. This open, collaborative process helped us to push the envelope in thinking about the impacts of technology and globalization on our lives, about our customary ways of managing our leadership role in the transportation system, and about how we should carry out our mission.

As a result of this process, we now understand that we need to develop new ways of thinking, new approaches, new policies, and new strategies – in fact, to foster a climate of innovation throughout the system – if we are to meet our national transportation goals. Creating a climate of innovation requires us to collaborate with and engage a more diverse group of stakeholders to:

- Support strategic transportation research;
- Reduce barriers to and increase incentives for innovative ways of moving people and goods;
- Act quickly to incorporate web-enabled and other new technologies in conducting our daily business; and
- Support the education of the next generation of transportation professionals.

DOT has many tools to apply in support of innovation. They include the ability to leverage private and other non-federal funds; to support demonstration projects; to benchmark and disseminate information on best practices in transportation; and to diffuse new technologies into the transportation enterprise. We aim to achieve our strategic goals by improving our ability to manage for results and innovation while keeping pace with and anticipating the needs of the traveling public and the transportation industry. We are optimistic that our contributions will be seen by the public as value added.

As we present this new strategic plan, we rededicate ourselves to being a Department that is visionary and vigilant. We pledge that we will:

- Be agile in addressing emerging transportation needs;
- Collaborate with and support our partners in the transportation enterprise; and
- Foster innovation throughout the system to realize the power of transportation to make the lives of all Americans better.

2. Scope of the American Transportation System

America's transportation network is the tie that binds our economy together. Our strong and efficient transportation system provides businesses with access to materials and markets, and provides people with access to goods, services, recreation, jobs and other people. Transportation touches each one of us every day in all aspects of our lives. One in eight jobs throughout the economy is directly linked to transportation. Each day, about 440,000 public school buses transport 24 million children to and from school and school-related activities.

Transportation contributes 11 percent of the nation's gross domestic product (GDP) amounting to approximately $950 billion. Transportation accounts for 19 percent of spending by the average household in America – as much as for food and health care combined – and is second only to spending on housing.

The U.S. transportation system carries over 4.7 trillion passenger miles of travel and 3.7 trillion ton miles of domestic freight generated by about 270 million people, 6.7 million business establishments, and 88 thousand units of government. Rail and maritime transportation each account for over 11 percent of the tonnage carried.

The system is comprised of 3.9 million miles of public roads, and 2 million miles of oil and natural gas pipelines. There are networks consisting of 120 thousand miles of major railroads, over 25 thousand miles of commercially navigable waterways, and over 5 thousand public-use airports. This vast system also includes over 500 major urban public transit operators and more than 300 ports on the coasts, Great Lakes, and inland waterways.

In 1999, the system carried 2.7 trillion miles of travel by cars and trucks, more than 9 billion trips on public transit, more than 640 million passenger boardings on airplanes, 21 million trips on Amtrak, and nearly 700 million rail freight train miles.

Transportation is a strategic investment that is essential to strengthening America for the fresh challenges and limitless opportunities of the 21st Century. America will need an integrated transportation system in the future that moves people, goods, information and services safely and efficiently.

3. The United States Department of Transportation

The U.S. Department of Transportation (DOT) occupies a leadership role in the Nation's transportation enterprise. Created in 1967, DOT brought under one umbrella several transportation missions, some of which have been in existence since the 1700's.

DOT's missions and programs have continuously evolved mirroring transformations that have occurred throughout the transportation enterprise. For example, in 1999, the Congress and the Clinton-Gore Administration created the Federal Motor Carrier Safety Administration to deal with critical truck safety issues as they have become more important in our society. [1]

The visionary and vigilant people of DOT are 100,000 strong with civilian and military men and women dedicated to improving transportation throughout the United States and around the globe. DOT's budget invests in the future, in a national transportation system that will be ready to meet the demands of the 21st Century. To accomplish this, the Clinton-Gore Administration proposed a record $54.9 billion investment in our national transportation system in 2001, the highest level in the history of DOT.

DOT is comprised of the Office of the Secretary, the Transportation Administrative Service Center, the Surface Transportation Board[2] and 11 operating administrations.

United States Coast Guard
Federal Aviation Administration
Federal Highway Administration
Federal Railroad Administration
National Highway Traffic Safety Administration
Federal Transit Administration
St. Lawrence Seaway Development Corporation
Maritime Administration
Research and Special Programs Administration
Bureau of Transportation Statistics
Federal Motor Carrier Safety Administration

[1] A summary of the legislative authorities that direct DOT's various missions and programs is in Appendix A and a schedule for the reauthorization of DOT's missions and programs is in Appendix B

[2] With passage of the Interstate Commerce Commission Termination Act (P.L. 104-88, December 29, 1995), Congress established the Surface Transportation Board within DOT, effective January 1, 1996. While the Board is formally part of DOT, the Board is decisionally independent of DOT and by law "not responsible to or subject to the supervision or direction… of any other part of the Department of Transportation." (49 U.S.C. 703(c).)

4. Department of Transportation Values

Integrity
We live and work in unity with our core values – customer focus, diversity, professionalism, respect, teamwork and excellence.

Customer Focus
We strive to understand and meet the needs of our customers.

Diversity
We value our diverse workforce and create a work environment that is free of prejudice and discrimination.

Professionalism
We exemplify the highest standards of dedication, trust, cooperation, pride, and courtesy in the work environment.

Respect
We respect differences in people and ideas.
We treat each other and those we serve with fairness, dignity, and compassion.
We encourage individual opportunity and growth.

Teamwork
We support each other and work together as a team, in a ONE DOT fashion.

Excellence
We excel as responsible stewards of taxpayers' resources.
We strive to improve our performance and to track our progress.
We encourage creativity and innovation through empowerment.

5. Strategic Plan Summary

Vision

A visionary and vigilant Department of Transportation leading the way to transportation excellence and innovation in the 21st century.

Mission

Serve the United States by ensuring a safe transportation system that furthers our vital national interests and enhances the quality of life of the American people.

Strategic Goals

Safety: *Promote the public health and safety by working toward the elimination of transportation-related deaths and injuries.*

Mobility: *Shape an accessible, affordable, reliable transportation system for all people, goods and regions.*

Economic Growth: *Support a transportation system that sustains America's economic growth.*

Human and Natural Environment: *Protect and enhance communities and the natural environment affected by transportation.*

National Security: *Ensure the security of the transportation system for the movement of people and goods, and support the National Security Strategy.*

Organizational Excellence Goal

Advance the Department's ability to manage for results and innovation.

6. Safety Strategic Goal

"Promote public health and safety by working toward the elimination of transportation-related deaths and injuries"

6.1 Outcomes

1. Reduce transportation-related deaths

2. Reduce transportation-related injuries

6.2 Strategies

Safety is President Clinton's and Vice President Gore's top transportation priority, our chief strategic goal and the North Star by which we are guided and willing to be judged. Transportation makes possible the movement of people and goods, fueling our economy and improving the quality of life. At the same time, it exposes people and property to the risk of harm. While we have made great progress in making travel safer during the past seven years, we remain committed to improving the benefits of transportation and to reducing the threats transportation poses to the safety and well being of the American people.

We will employ seven broad strategies to achieve our safety outcomes – reducing transportation-related fatalities and injuries. We will: 1) build safety into the transportation infrastructure; 2) conduct research on critical safety issues; 3) continue Vice President Gore's reinventing government initiative to advance standards and regulations that allow innovation while improving safety levels; 4) mitigate the consequences of safety incidents through more effective response; 5) create incentives for improving safety; 6) educate the public on the benefits of safe transportation; and 7) provide timely analyses and forecasts of safety trends and issues.

Taken together, these strategies create a climate for innovation in transportation safety. We will consult and collaborate with an ever-widening group of stakeholders, increase safety R&D, conduct our business using web-enabled and other new technologies, provide incentives to reduce barriers to innovation, and educate the next generation of transportation professionals – a new way of doing business. These strategies address the needs of all transportation users including both motorized and non-motorized modes.

The resources and programs listed in DOT's Annual Performance Plan and budget are necessary to achieve the safety outcomes presented above and execute the strategies presented below. Each year, DOT reassesses its performance goals based on appropriations. The schedule for executing the strategies extends from the present

through 2005. We will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service. Each of the following strategies supports, our dual safety outcomes – to reduce transportation fatalities and injuries.

6.2.1 Infrastructure Strategy: Work with government, non-government entities and the private sector to build and maintain infrastructure that improves safety for motorized and non-motorized users through:

a. Research to understand the interrelationships among vehicles, infrastructure, the environment and the operator in causing transportation crashes and incidents;
b. Incorporation of safety into design of and transition to new systems;
c. Incorporation of new safety-enhancing technologies such as intelligent transportation systems, vehicle flow controls and other technologies; and
d. Developing and refurbishing transportation infrastructure to accommodate safely the full range of transportation users under all weather conditions.

6.2.2 Research and Development Strategy: Collaborate with public and private transportation providers and academia, to support, promote, and conduct national and international research on transportation safety in all modes targeting:

a. The understanding of human performance and behavior affecting safety such as fatigue;
b. New technologies such as ITS, automation, instructional technologies and advanced vehicle controls that improve operator performance and reduce safety risk; and
c. Causes of and countermeasures for transportation-related incidents.

6.2.3 Standards, Regulations and Enforcement Strategy: Collaborate with all interested stakeholders to develop and promote performance-based national and international safety standards and regulations that:

a. Improve the design, construction, and maintenance of infrastructure, vehicles, and transportation systems that will be safe under adverse weather and geological conditions;
b. Update licensing standards, training, working conditions, and operator requirements for safe operation of vehicles by commercial and personal operators;
c. Are simplified, written in plain English and other languages as needed, address the highest risk problems, use third party or self-certification when appropriate, and are supported by strong certification standards;
d. Achieve more uniformity and equity in federal, state, and local transportation safety rules and enforcement;
e. Provide flexibility and allow for innovation and incentives that improve transportation safety;
f. Address the risks associated with the precursors of fatalities and injuries;
g. Promote safety standards that anticipate application of new technologies in the increasingly complex technological operating environment of transportation;
h. Promote performance-based standards to accelerate the deployment of new safety infrastructure, equipment, systems and vehicle technologies;
i. Lead to the adoption of stronger and better harmonized international safety standards and enforcement; and
j. Consider the unique safety needs of bicyclists, pedestrians and motorcyclists.

6.2.4 Response Strategy: Mitigate the negative consequences of safety incidents by partnering with stakeholders to:

a. Research and expand the use of technologies and equipment that improve the survivability of people and the timeliness of incident detection;
b. Plan and rehearse response strategies with other federal, state and local emergency response authorities; and
c. Develop and promote standards for industry, state and local emergency response authorities to use to improve coordinated emergency response.

6.2.5 Incentives Strategy: Collaborate with transportation safety advocates, builders, operators and users to explore incentives for improving safety targeting:

a. Financial and other inducements for private and public organizations to purchase and use innovative safety equipment and practice safe behavior;
b. The feasibility of third-party or self-certification of safety compliance for private and commercial operators;
c. The impact of human factor errors on transportation safety; and
d. Cost-shared, private-public partnerships to accelerate the development, demonstration and deployment of new safety technologies and systems.

6.2.6 Public Information and Education Strategy: Expand alliances with a wide range of public and private organizations from schools to operators to advocates and communicate the advantages of safe behavior and practices including:

a. Targeted education and information on safe behavior and practices, (for example, safe vehicle operation, driver education, pedestrian and bicycle safety, seat belt use, alcohol and drugs, and undeclared hazardous materials in passenger luggage on aircraft) to promote public demand for safer transportation and to reduce transportation crashes and incidents;
b. Telecommunications, web-enabled technologies and electronic training packages to provide transportation safety information to the public in formats they understand; and
c. Risk-based management and best practices approaches to solving common transportation safety problems at the international, national, regional, state, and local levels.

6.2.7 Information Sharing and Analysis Strategy: Collaborate to collect and share information on actual and potential causes of transportation incidents with those who can prevent or mitigate future incidents through:

a. Use of web-enabled and other new technologies to increase the timeliness, validity, and reliability of safety data gathered throughout the transportation enterprise;
b. Collection, analysis, and publication of transportation safety data and information to update and track safety trends and issues;
c. Encouragement of voluntary submission of information on potential causes of transportation incidents through legislation, regulations, and policy guidance, and protection of the information and its sources; and
d. Education and information exchange on best practices in safety technology and operations.

6.3 Management Challenges

Safety is DOT's top priority and any discussion of the future of transportation must begin with a focus on safety. The strategies articulated in the previous section

represent our approach to future transportation safety challenges. However, achievement of DOT's safety outcomes – reducing transportation fatalities and injuries – is contingent upon addressing the safety management challenges identified by the General Accounting Office (GAO) and DOT's Office of Inspector General (OIG). The language that describes each challenge is essentially the language used by the OIG.

6.3.1 Aviation Safety[3]

The OIG has stated that…the FAA must address known risks, and the challenges of identifying and addressing unknown risks that otherwise may cause future accidents. The OIG stated that safety must take priority over the impact of increased demand, new technologies and budget cuts and listed safety issues that the FAA should address.

FAA needs to follow through, and establish and implement procedures to ensure U.S. air carriers perform thorough and relevant safety assessments as part of the code share approval process:

- FAA will need to: implement new education and training programs for controllers, pilots, and vehicle operators to increase their awareness of ground safety at the airport; improve procedures, airport markings and lighting to foster safer airport movement by pilots and vehicles; and implement technology-based initiatives to assist controllers in preventing runway accidents;
- The number of air traffic operational errors and deviations is a major risk to a safer aviation system. FAA must provide increased training to non-supervisory air traffic controllers acting as controllers-in-charge on their new roles and responsibilities for ensuring safe air traffic operations;
- FAA should implement its new Air Transportation Oversight System (ATOS) inspection process for air carriers and improve the accuracy of safety databases; and
- FAA should implement the flight operation quality assurance (FOQA) program to advance aviation safety by obtaining better safety data from air carriers.

The FAA has acknowledged these aviation safety concerns and has developed an agenda for the years 2000-2005 that includes the following milestones.

> *Milestone: Publish a final rule requiring installation and use of Terrain Awareness Warning System (TAWS) in commercial aircraft cockpits to help prevent controlled flight into terrain. TAWS final rule published in the Federal Register on March 29, 2000.*
> *Milestone: Complete Air Traffic Controller Controlled Flight Into Terrain (CFIT) training through publication of an Air Traffic Bulletin. Issue CFIT training aid for operators. (FY 2000)*

[3] All management challenges throughout the Strategic Plan are from a letter to Chairman Fred Thompson, Senate Governmental Affairs Committee from Kenneth M. Mead, DOT Inspector General dated December 17, 1999.

Milestone: FAA efforts to reduce runway incursions are detailed in the Runway Incursion Program Implementation Plan, published in April 1999. Milestones over the next several years are to implement a host of tasks identified in the plan for each year (Ongoing through 2004).
Milestone: Concerning ATOS, in FY 2000 FAA is developing job aids and a Standardization Seminar to be attended by all Certificate Management Team members. (FY 2000)
Milestone: Complete a "Continuous ATOS Development Plan" to address Phase I implementation issues and move toward expanding ATOS to new carriers in Phase II. (FY 2001)
Milestone: Implement Phase II of ATOS, to include inspector training, automation enhancements, and expansion of ATOS to new carriers. (FY 2003)
Milestone: FAA will determine the feasibility of expanding ATOS beyond Federal Aviation Regulations, part 121 - air carriers. (FY 2002)
Milestone: FAA is moving forward on the Aviation Safety Action Program (ASAP). In FY 2000, FAA is revising the Advisory Circular, publishing a Handbook Bulletin on implementation, and approving ASAPs submitted by air carriers. (FY 2000)

6.3.2 Surface Transportation Safety

The OIG has raised several surface transportation safety management challenges. He stated that motor vehicle, railroad, and transit accidents account for over 42,000 deaths annually – more than 90 percent of all transportation-related fatalities. The OIG further stated that in 1998, more than 15,000 hazardous materials incidents were reported to the Department, including 429 serious incidents resulting in 13 deaths and 66 injuries.

Motor Carriers

The Motor Carrier Safety Improvement Act of 1999 provides DOT with the tools needed to improve motor carrier safety, including the establishment of the Federal Motor Carrier Safety Administration (FMCSA). The key to success will be leadership, vision, and implementation of the legislation. The OIG has stated that implementation should include efforts to: strengthen the enforcement program; improve the quality and timeliness of safety performance data; identify unsafe motor carriers; analyze crash data; and standardize crash data collection procedures.

FMCSA has acknowledged these safety concerns. The FMCSA safety agenda includes the following milestones.

Milestone: FMCSA and NHTSA will begin a three-year study of crash causation in FY 2000. The pilot study will be completed in FY 2001.
Milestone: FMCSA will provide additional funding for the Motor Carrier Safety Assistance Program for FY 2001-2003 for increased state roadside inspections, compliance reviews, and traffic enforcement.
Milestone: FMCSA will establish links between state motor carrier registration systems and federal safety information systems by adding three to five new states to the Performance and Registration Systems Management (PRISM) program each year.
Milestone: FMCSA will increase the number of compliance reviews performed by safety investigators to an average of four to five per month by FY 2000.

> *Milestone: FMCSA will strengthen enforcement by completing a rulemaking by 12/00 to allow for suspension of carrier registrations for failure to pay safety fines.*

The OIG has stated that a number of Mexican motor carriers have limited experience operating within U.S. safety standards and that Mexican domiciled carriers are operating improperly in the U.S.

FMCSA has acknowledged these safety concerns and has included the milestone presented below in its safety agenda.

> *Milestone: FMCSA will publish a final rule by FY 2001 to establish new operating authority requirements and procedures for Mexican motor carriers and impose new penalties for motor carriers operating beyond their authority.*

The OIG has stated that fatigue is a major factor in commercial vehicle crashes. Driver hours-of-service violations and falsified driver logs pose significant safety concerns. The OIG believes that the use of electronic recorders and other technologies to manage the drivers' hours-of-service requirements have significant safety value and could be accomplished if they were phased in over a period of years and coupled with a revised hours of service rule.

FMCSA has acknowledged the fatigue issue through the milestone below.

> *Milestone: FMCSA will issue a Notice of Proposed Rulemaking for new driver hours-of-service regulations which include the use of electronic logbooks in FY 2000.*

FMCSA has acknowledged that technology holds the promise of improving motor carrier safety. The development of on-board truck diagnostic and collision warning systems require further development and testing before they can be introduced into the commercial motor carrier fleet. The Intelligent Vehicle Initiative, Commercial Vehicle Platform, is accelerating the introduction of new technologies in partnership with major vehicle manufacturers. To address these safety concerns, the FMCSA safety agenda includes the following milestones:

> *Milestone: FMCSA will complete real-world operational tests by FY 2002 on truck rollover stability, hazard warning systems, collision warning, and advanced braking systems.*
> *Milestone: FMCSA will deploy Commercial Vehicle Information Systems and Networks in a majority of states by FY 2003.*
> *Milestone: FMCSA will pilot a brake-testing device in FY 2001. If successful, this technology could improve the efficiency of roadside inspections.*

The OIG has stated that the Motor Carrier Safety Improvement Act makes enhancements to the commercial driver's license program. However, DOT must establish plans for completing the rulemakings required to implement these enhancements. Federal oversight must ensure that States take timely action to disqualify commercial drivers who commit the offenses prohibited in the new Act and in previous legislation.

FMCSA has acknowledged these safety concerns, and included the following milestone in its safety agenda.

> *Milestone: FMCSA will complete a Notice of Proposed Rulemaking to implement the commercial drivers license improvements by 12/00.*

Rail Crossings

The OIG has stated that further safety improvements at rail-highway grade crossings are required since serious crossing accidents continue to occur. To help achieve DOT's accident and fatality reduction goal, the FRA and the FHWA need to target limited resources to proven, cost-effective strategies, such as installation of median barriers; use of well-advertised photo enforcement particularly at problematic crossings; and imposition of stricter penalties to deter drivers from ignoring signals and bypassing existing safety devices.

The FRA has acknowledged these rail crossing safety concerns through a three-pronged strategy: education; enforcement; and technological innovations that have been proven effective. The FRA will accomplish the following milestones.

> *Milestone: To help target high-risk crossings for corrective action, FRA will make its highway-rail crossing computer file available on the Internet for use by States and local governments in FY 2000.*
> *Milestone: FRA will increase its funding ($500,000) for a new, nationwide, public outreach program, focusing geographically and demographically on those States reporting the most grade crossing and trespasser fatalities in FY 2000.*

The FRA and FHWA have acknowledged rail crossing safety concerns and included the following milestones in their safety agendas.

> *Milestone: DOT's Intermodal Highway Rail Crossing Team will develop guidance to assist state and local engineers to determine the most appropriate traffic control devices or grade separation for highway rail grade crossings in CY 2001.*
> *Milestone: DOT's Intermodal Highway Rail Crossing Team will develop best practices, procedures, and guidance that will establish maximum thresholds for the vertical alignment of highway rail crossings in CY 2001.*

Hazardous Materials

The OIG has stated that a DOT Hazardous Materials Program Evaluation found that each operating administration runs its own hazardous materials program, that there is no focal point for establishing DOT-wide goals for hazardous materials, and that the Department lacks a mechanism for quickly addressing problem areas or obtaining data to make informed programmatic decisions.

DOT has acknowledged this safety challenge and has responded by placing the focal point for hazardous materials administration and delivery under the leadership of the Associate Deputy Secretary and Director, Office of Intermodalism. The Associate Deputy Secretary will be supported in implementing the milestones below by a ONE DOT team with expertise in the transportation of hazardous materials.

Milestone: Develop a plan to implement all the recommendations contained in the Evaluation of the DOT Hazardous Materials Compliance and Enforcement Program in FY 2001.[4]
Milestone: DOT will implement the new organizational structure recommended in the evaluation in CY 2000.

Pipeline Safety
The OIG has observed that because the consequences of a pipeline rupture can be catastrophic, there is a critical need for DOT to continue to enforce pipeline safety laws and implement recommendations to strengthen pipeline safety programs. The OIG stated that provisions for consideration during reauthorization of the pipeline safety program should include: improving accident data collection and analysis; establishing periodic testing requirements; and expanding research and internal RSPA expertise on new technologies to detect pipeline defects.

RSPA has acknowledged these safety concerns and has proposed two milestones.

Milestone: Pipeline program reauthorization legislation introduced FY 2000.
Milestone: Increased funding for state pipeline safety programs FY 2001.

The OIG has stated that the Pipeline Safety Act of 1992 required regulations be issued by 1994 to place greater emphasis on environmental protection and expand the zone of concern beyond highly-populated areas. RSPA has not issued regulations establishing criteria to identify, map, and periodically inspect hazardous liquid pipelines located in areas unusually sensitive to environmental damage from a pipeline accident.

RSPA has acknowledged these challenges and has proposed regulations that define areas unusually sensitive to environmental damage. These rules must be finalized before complementary rules can take affect. RSPA has proposed the following milestones.

Milestone: Proposed rule concerning protection in high consequence areas for large liquid pipelines FY 2000; Final rule FY 2001.
Milestone: Final rule defining unusually sensitive areas FY 2001.

6.4 Completed Program Evaluations

Befitting an agency whose top priority is safety, DOT evaluated several of its safety programs aimed at reducing transportation fatalities and injuries. The program evaluations presented below reinforce DOT's commitment to improving transportation safety. DOT considered the results of the evaluations in developing the strategies in section 6.2. For example, the results of the motor carrier compliance review contributed to our standards, regulations and enforcement strategies in section 6.2.3. The results of all of the safety program evaluations contribute to the outcomes of reducing transportation fatalities and injuries.

6.4.1 Lap/Shoulder Belts in the Back Outboard Seating Positions (NHTSA 1999): This evaluation found that lap/shoulder belts reduce fatality risk by 15 percent

[4] Please see the evaluation in section 6.4.7

relative to lap only-belted back seat occupants of passenger cars. The results supported programs to increase lap/shoulder safety belt usage by back seat occupants.

6.4.2 Highway Safety Assessment (NHTSA 1998): This evaluation found that federal highway safety grants were used by states to address safety priorities as intended by Congress.

6.4.3 Center High Mounted Stop Lamps in Passenger Cars and Light Trucks (NHTSA 1998): This evaluation found that cars equipped with center high mounted stop lamps are 4.3 percent less likely to be struck in the rear than cars without lamps, verifying a regulation.

6.4.4 Relationship of Vehicle Weight and Size to Fatality Risk in Passenger Cars and Light Trucks (NHTSA 1997): This evaluation found that although reductions in size and weight of passenger cars are associated with net increases in crash fatalities, when light trucks are reduced in size and weight, they become less hazardous to car occupants, pedestrians, bicyclists and motorcyclists.

6.4.5 Fatality Reduction by Air Bags (NHTSA 1996): This evaluation found that driver air bags reduce overall fatality risk by approximately 11 percent, supporting agency programs to inform the public.

6.4.6 Safe Miles and Compliance Review (CR) Assessment Models (FMCSA 1999): The goal of this evaluation was to measure the effectiveness of key safety programs on reducing crashes involving motor carriers. The evaluation confirmed the desirability of increasing on site compliance reviews and roadside inspections to reduce motor carrier fatalities and injuries. The initial safe miles model estimated total 1996 program benefits from the roadside inspection program to be $86 million. The initial CR model estimated that for the 8,111 motor carriers receiving CRs in 1996, 4,317 crashes were avoided in 1996-1998, resulting in a societal benefit of about $580 million, as the direct result of FHWA/Office of Motor Carrier and Highway Safety's compliance review intervention.

6.4.7 DOT-Wide Hazardous Materials Compliance and Enforcement Program (OIG, USCG; FAA, FMCSA, FRA, RSPA 1999): A ONE DOT team representing five operating administrations and the OIG evaluated DOT's hazmat program. The objectives of the study were to assess the effectiveness of the program in each step of the transportation process, recommend improvements and identify areas for further study. Five major findings were: 1) lack of DOT-ide oversight of OA's responsible for ensuring hazmat safety; 2) shippers of hazmat receive less attention than carriers yet they offer the greatest opportunity to improve safety; 3) human error is the greatest contributing factor to hazmat incidents; 4) DOT lacks reliable and accurate data to measure program effectiveness; and 5) there are a number of areas requiring further study including undeclared shipments, adequacy of current regulations, hazmat shipments in the U.S. mail, DOT's inspection authority, and lack of program performance measures.

6.4.8 The Safety Assurance and Compliance Program: Mid-Year 1999 Report (FRA 1999): This mid-year evaluation demonstrated that FRA had significant success through its Safety Assurance Compliance Program in reducing rail-related fatalities, employee casualties, grade crossing deaths, and the train accident rate over the five year period 1993-1998.

6.5 External Factors

DOT used four future scenarios[5] in the planning process to illustrate how external factors might plausibly impact transportation in the next 30 years. Globalization, demographics, the U.S. economy and the role of government were the major dimensions of the scenarios. We learned that these and many other external factors, such as the speed at which new technologies are widely adopted, may play a part in our ability to achieve our safety outcomes. Unable to predict how these factors will interact to effect transportation in the future, we have outlined both the positive and negative safety consequences. Thus, all the external factors presented below could affect our ability to achieve our safety outcomes, the reduction of transportation fatalities and injuries.

6.5.1 Economic Factors

Continuing economic prosperity will stimulate demand for transportation, increased commerce and tourism both nationally and internationally, and a greater diversity of forms of transportation. It may also generate more trips and resultant congestion which present new safety challenges related to issues such as adequacy of systems maintenance, compatibility among designs, different users including non-motorized users, new vehicles, and system interoperability.

Greater private investment in transportation creates new safety challenges to establish and maintain uniform, acceptable levels of safety in system designs and practices particularly in light of the rapid globalization of the transportation industry.

Expansion and integration of the telecommunications and e-commerce industry sectors with transportation systems raises new challenges related primarily to unsafe user practices such as use of cell phones and other office and personal devices while driving.

6.5.2 Technological Factors

Adaptation of new materials, alternative fuels, and consumer electronics to transportation systems offers the potential to reduce the number and severity of safety-related incidents. It also raises possible new concerns related to safety-worthiness of system designs.

Increased technological complexity of transportation systems offers the potential to reduce the frequency of serious transportation incidents, but because it may be more difficult to operate complex systems, incidents attributable to human operator error could increase.

Increased use of technology for comfort and convenience purposes may benefit transportation system users, but could also lead to increased safety risks in the operating environment.

6.5.3 Political Factors

Growing involvement and influence of state and local governments, private industry, and communities in safety policy implementation increases the opportunity for safety gains, but also increases the number of stakeholders who must collaborate and cooperate making it more difficult to gain consensus.

Emergence of transnational corporations and globalization of markets raises concerns about maintaining safety standards in system design and use across national

[5] DOT's global transportation scenarios are at www.dot.gov/stratplan

borders, and will stimulate demand for further harmonization of international safety standards related to system design and use as well as operator training.

Increasing public concern for safety will stimulate increased government oversight, public and private investment in safety design and practices, and a societal shift toward safer behaviors and attitudes.

6.5.4 Environmental Factors

An increase in the incidence of severe, adverse weather conditions based on global warming predictions may lead to more serious and frequent transportation incidents, due to extreme and unsafe travel situations for transportation system users.

Increasing demands for environmentally-compatible designs and practices may contribute to safety or, in some cases, may compromise safety in transportation systems.

6.5.5 Social Factors

The aging of the U.S. population will present new safety challenges such as increased congestion in our transportation systems. To improve safety levels, the special needs and risks associated with the use of these systems by elderly citizens must be taken into account when designing and building new vehicles and infrastructure.

A changing ethnic mix in the population will introduce new barriers, such as language barriers and differing cultural norms, to achieving better transportation safety practices among the traveling public and in commercial transportation.

The migration of the population to the Southern and Western states in the U.S., and the continued shift away from central core cities to suburban and non-urban areas, could increase the use of and expose risks in, transportation systems.

Existing transportation patterns are likely to shift in unpredictable ways due to increased telecommuting, video and teleconferencing, mobile offices, with implications for traffic congestion, sprawl containment, and home relocation to urban cores.

6.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each safety outcome in this Strategic Plan for 2000-2005 will be supported by one or more safety performance measures fully developed in DOT's Annual Performance Plans for the fiscal years 2002-2005. DOT's Annual Performance Reports will provide targets, narrative and quantitative information on the extent to which we have achieved our safety outcome goals. Table 6.6 below illustrates the relationships between the outcomes in the Strategic Plan and the measures in the Performance Plan. The measures presented in Table 6.6 are candidates for the Performance Plan and not final selections.

Table 6.6 Safety Strategic Goal, Outcomes and Performance Plan Candidate Measures

"Promote public health and safety by working toward the elimination of transportation-related deaths and injuries."

Outcomes	Performance Plan Candidate Measures
Reduce transportation-related deaths The President's goal to reduce alcohol-related fatalities to no more than 11,000 by 2005. Reduce U.S. aviation fatal accident rates by 80 percent by 2007 The President's goal to reduce child fatalities by 25 percent by 2005 Reduce motorcycle-related fatalities by 5% by 2005 Reduce single vehicle run off road-related fatalities by 15 percent by 2005 Reduce speed-related fatalities by 5 percent by 2005 Reduce commercial truck-related fatalities by 50 percent by 2010 Reduce bicyclist and pedestrian fatalities by 10 percent by 2005 and further reduce the pedestrian fatality rate from two per 100,000 population to one per 100,000 population by 2010 Reduce transportation-related injuries The President's goal to increase seat belt use to 90% by 2005 Reduce bicyclist and pedestrian injuries by 10 percent by 2005 and further reduce the pedestrian injury rate from 30 per 100,000 population to 20 per 100,000 population by 2010	Number of Fatalities and Fatality Rates Percentage of highway fatalities that are alcohol-related Highways fatalities per 100 million vehicle miles of traveled Number of fatalities involving large trucks Number of recreational boating fatalities Rail-related fatalities per million train-miles Transit fatalities per 100 million passenger miles traveled Number of bicyclists and pedestrians killed Percent of all mariners in imminent danger who are rescued Number of Injuries and Injury Rates Number of injured persons involving large trucks Persons injured on the highway per 100 million vehicle miles traveled Transit injured persons per 100 million passenger miles traveled Number of bicyclists and pedestrians injured Precursors to Fatalities and Injuries Fatal aviation accidents per 100,000 flight hours Percent of front seat occupants using seat belts Train accidents per million train miles Grade crossing accidents divided by the product of 1) million train miles and 2) trillion vehicle miles of traveled Failures of natural gas transmission pipelines Number of serious hazardous material incidents Number of general aviation fatal accidents Number of fatal aviation accidents (commercial air carriers) per 100,000 flight hours Number of runway incursions Aviation operational errors per 100,000 facility activities Number of high-risk passenger fatalities on passenger vessels

6.7 Data Capacity

The candidate performance measures in Table 6.6 above include measures utilized in DOT's 2001 Performance Plan and new candidate measures. DOT has developed data for each measure, and has published source and accuracy statements for each of the data systems used for constructing these measures. [6] We have described the scope of each measure, the limitations of the data and the statistical issues regarding uncertainty in the measurement.[7] Led by the Bureau of Transportation Statistics (BTS), DOT's Operating Administrations are implementing a plan for verification and validation of all D0T data used in implementing GPRA and for other analytical purposes.[8] DOT is committed to continuous improvement in the accuracy, reliability

[6] See www.bts.gov
[7] See Appendix I DOT 2001 Performance Plan
[8] See page 161 DOT 2001 Performance Plan

and timeliness of transportation safety data and will execute the plan described below.

Safety Data Improvement Plan
DOT will focus a major effort over the next several years on improvements to its safety data. Safety has always been our preeminent strategic goal, and DOT's Transportation Safety Conference held in 1999 highlighted the need for better data. As a result, DOT created a Safety Data Task Force. A series of four workshops was held in the Fall of 1999, followed by a Safety Data Conference in April 2000. Out of these workshops DOT produced a Safety Data Action Plan to organize data improvement efforts. BTS is the lead agency for implementation.

- By September 30, 2000 we will develop plans for major research projects to: 1) develop common criteria for reporting injuries and deaths; 2) develop common data on accident circumstances; 3) improve data quality; 4) develop better data on accident precursors; 5) expand the collection of near-miss data to all modes; 6) develop a variety of common denominators for safety measures; 7) advance the timeliness of safety data; 8) link safety data with other data; 9) explore options for using technology in data collection; and 10) expand, improve and coordinate safety data analysis.
- By September 30, 2001 we will complete implementation plans for these projects and implement those that can be done with available resources.
- By December 31, 2001 we will begin implementing all of the plans in each of the ten research areas, subject to availability of resources.

6.8 Cross-Cutting Programs

DOT's staff seeks opportunities to partner with a wide variety of public and private organizations to achieve our preeminent safety goal. Below we present a selection of active partnerships that are targeted to our safety outcomes -- reducing transportation fatalities and injuries.

6.8.1 Safety Belt Use and Occupant Protection

Goal: The goal of this Presidential initiative is to increase safety belt use nation-wide and provide technical assistance in meeting the requirements of Executive Order 13043.
Agencies Involved: DOT/ NHTSA lead, Department of the Interior (national parks), Department of Defense, Tribal Governments, and federal agencies and state governments, and numerous national organizations.

6.8.2 Drug-free Workplace

Goal: Create drug-free workplaces that reduce drinking and drug use by transportation workers.
Agencies Involved: DOT/ODAPC lead, Departments of Health and Human Services and Labor, National Transportation Safety Board, and Office of National Drug Control Policy.

6.8.3 Drinking and Using Drugs While Driving

Goal: To reduce the incidence of drinking and using drugs while driving.
Agencies Involved: DOT/NHTSA lead, Departments of Health and Human Services and Justice, Office of Drug Control Policy.

6.8.4 Aviation Safety Research

Goal: To leverage FAA and National Aeronautics and Space Administration R&D resources to reduce the fatal accident rate for U.S. commercial air carriers.
Agencies Involved: DOT/FAA lead, National Aeronautics and Space Administration, National Transportation Safety Board.

6.8.5 Recreational Boating

Goal: To reduce recreational boating fatalities by promoting safe practices.
Agencies Involved: DOT/USCG lead, Army Corps of Engineers, National Park Service, the Boat U.S. Foundation, the National Safe Boating Council, the National Association of State Boating Law Administrators and others.

6.8.6 Safety Data Improvement

Goal: To improve transportation safety by improving the quality, timeliness, comparability, completeness and utility of safety data.
Agencies Involved: DOT/BTS lead, National Transportation Safety Board, National Aeronautics and Space Administration, Transportation Research Board, state and local government, industry.

6.8.7 Hazardous Materials Safety

Goal: Improve hazardous materials safety by facilitating improved strategic planning, program coordination and effective program delivery.
Agencies Involved: DOT/Office of Intermodalism lead, RSPA, FAA, FMCSA, USCG, FRA, Departments of Defense, Energy, and Health and Human Services, U.S. Bureau of Alcohol, Tobacco and Firearms, Environmental Protection Agency, Occupational Health and Safety Administration, U.S. Customs Service, U.S. Postal Service, Centers for Disease Control and Prevention, state governments, police and firefighter organizations, and industry.

6.8.8 Injury Prevention and Control

Goal: To conduct complementary research on injury prevention and related issues.
Agencies Involved: DOT/NHTSA and the National Center for Injury Prevention and Control, Center for Disease Control.

7. Mobility Strategic Goal

"Shape an accessible, affordable, reliable transportation system for all people, goods and regions"

7.1 Outcomes

1. Improve the physical condition of the transportation system
2. Reduce transportation time from origin to destination for the individual transportation user
3. Increase the reliability of trip times for the individual transportation user
4. Increase access to transportation systems for the individual transportation user
5. Reduce the cost of transportation for the individual user

7.2 Strategies

Since the nation's founding, the mobility transportation provides has helped to define us as a people. Our ability to travel from place to place allows us to connect with other people, work, school, community services and marketplaces. Mobility often defines the economic geography of regions within the nation. In partnership with the States and private transportation providers, we have made continuous improvements in mobility throughout the nation.

Since 1993, almost 5,000 miles of the National Highway System have been restored to acceptable condition. More than 100 miles of new rail transit have been opened increasing mobility and improving the livability of our communities. Investment in transportation infrastructure has grown nearly 74 percent from the 1990-1993 average to the year 2000.

DOT's mobility outcomes represent our continuing commitment to an accessible, reliable and affordable transportation system. We will employ seven basic strategies to achieve our mobility outcomes. These strategies address regional as well as local transportation and are directed toward improving the transportation experience of the individual user whether for personal or business reasons.

We will: 1) maximize the efficiency of our transportation resources; 2) increase access to transportation for all Americans; 3) assure mobility in emergencies and other disruptions; 4) provide timely information on local, regional, national and global transportation needs; 5) conduct research on mobility issues; 6) develop

performance based standards for vehicles and infrastructure; and 7) explore incentives for improving mobility.

These strategies anticipate the requirements of the growing population of older Americans as well as the increasing number of household deliveries. They address intermodal connections and the transportation needs of key geographic areas and regions. They include important initiatives such as the MARAD-Coast Guard multi-year effort dedicated to improving maritime freight transportation.

In contrast to the DOT safety strategies all of which supported our safety outcomes of reduced fatalities and injuries, our mobility strategies are targeted to specific mobility outcomes. The resources and programs listed in DOT's Annual Performance Plan and budget are necessary to achieve the mobility outcomes presented above and execute the strategies presented below. Each year, DOT reassesses its performance goals and targets based upon appropriations. The schedule for executing the strategies extends from the present through 2005. We will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service.

7.2.1 Strategies for the Efficient Use of Transportation Resources:

a. Collaborate with the private sector and the scientific community to support research and create incentives for deployment of technologies that increase fuel efficiency and eliminate emissions. (Supports outcome 5)
b. Partner with stakeholders to support research, development and deployment of new technologies that adapt the transportation infrastructure and vehicles to the evolving needs of individuals, families, and the workforce. (Supports outcomes 1-5)
c. Collaborate with public and private transportation providers to leverage financial resources through regional planning efforts that improve intermodal connections and efficiency. (Supports outcomes 2, 3, 4 and 5)
d. Encourage transportation agencies to integrate bicycling and walking as part of their planning, design, construction, operations and maintenance activities. (Supports outcome 4)
e. Reduce congestion and demand for traditional transportation by promoting a shift to more efficient transportation modes, methods and use of alternatives to transportation (e.g., bicycles, telecommuting, teleconferencing etc.). (Supports outcomes 2 and 3)
f. Promote land use that supports smart growth, shorter trips and availability of more transportation options by building coalitions with regional, state, metropolitan planning organizations, and other local interests. (Supports outcomes 2 and 4)
g. Use web-enabled and other information technologies to provide services to grantees and other customers. (Supports outcomes 1-5)
h. Encourage regional transportation planning including across state lines and international boundaries. (Supports outcomes 1 –5)

7.2.2 Strategies for Increasing Access to Transportation for all Americans:

a. Work with public and private sector interests to: identify transportation needs for all segments of America, especially the transportation disadvantaged, older and younger people, and people with disabilities; and supplement market

mechanisms to assure basic transportation availability, and flexibility of choice for all Americans. (Supports outcome 4)

b. Partner with current and potential transportation users to identify accessibility issues for various groups and implement actions to address those issues. (Supports outcome 4)
c. Work with public and private sector interests to improve accessibility in key segments of the transportation system including in geographic areas such as inner-cities, underserved areas, regions of the country, key corridors, bottlenecks and intermodal connections. (Supports outcomes 2, 3 and 4)
d. Collaborate with shippers, carriers and other users to identify future transportation accessibility and mobility needs and map out ways to achieve better freight mobility and improve the delivery of goods throughout the entire nation. (Supports outcomes 2, 3, 4 and 5)

7.2.3 Strategies for Assuring Mobility in Response to Disruptions and Emergencies:

a. Use web-based and other new technologies to update contingency planning and to improve response and restoration actions to damaged infrastructure and operations, including damage due to weather and other natural disasters. (Supports outcomes 1, 3 and 4)
b. Collaborate with government and private interests to upgrade mechanisms to predict and respond to catastrophic transportation disruptions. (Supports outcomes 1, 3 and 4)
c. Research what other nations have done and promote new design specifications for the infrastructure that minimize disruption and damage to transportation systems from natural disasters, severe weather and other catastrophic events. (Supports outcome 1)

7.2.4 Information Sharing, Analysis and Customer Focus Strategies:

a. Keep abreast of changing local, regional, national and global transportation needs; propose changes to address those needs; and use web-enabled and other new communications technologies to communicate with constituencies. (Supports outcomes 1-5)
b. Work more closely with the transportation community to develop the vision, knowledge and technical assistance needed to improve mobility decision-making by public and private organizations. (Supports outcomes 1-5)
c. Increase the timeliness, validity and reliability of transportation data related to mobility issues by taking advantage of web-enabled, and other new information technologies. (Supports outcomes 1-5)
d. Collect, analyze and publish, in user-friendly formats and understandable to people without transportation expertise, mobility data and information to identify critical trends and issues. (Supports outcomes 1-5)

7.2.5 Research and Development Strategy: Expand alliances with a wide range of public and private stakeholders in all modes to:

a. Explore the complex relationship between transportation and society including the relationship between mobility and well-being; (Supports outcomes 1-5)
b. Conduct research on advanced materials and design concepts that could improve the durability, reliability and longevity of infrastructure systems while reducing the cost, waste, pollution and emissions generated in producing them; (Supports outcomes 1, 4, and 5)

c. Investigate computer aided planning and design tools and methods for reducing the time and cost of infrastructure monitoring, maintenance and renewal; and (Supports outcome 1)
d. Conduct research on human-centered transportation systems that could provide affordable access for aging and transportation-disadvantaged populations. (Supports outcome 4)

7.2.6 Performance-Based Standards Strategy: Collaborate with stakeholders to:
a. Promote performance-based standards that accelerate the deployment of new infrastructure and vehicle technologies and systems; and (Supports outcomes 1, 2, 3 and 5)
b. Establish performance-based standards that minimize infrastructure disruption and damage from catastrophic events that interrupt transportation. (Supports outcomes 1 and 3)

7.2.7 Incentives Strategy: Collaborate with stakeholders to explore incentives for improving mobility, including proposing legislation where needed, to:
a. Reduce the time and cost of infrastructure development, deployment and maintenance; and (Supports outcomes 1 and 3)
b. Establish cost shared, public-private partnerships to accelerate the development, demonstration, and deployment of new technologies and systems that improve mobility. (Supports outcomes 1 and 4)

7.3 Management Challenges

The strategies we outlined in the previous section represent our approach to the mobility performance challenges we will face in the future. However, we acknowledge that achievement of our mobility outcomes is contingent upon addressing the priority mobility management issues identified by the GAO and DOT's OIG which are discussed below. The language that describes each challenge is essentially the language used by the OIG.

7.3.1 Air Traffic Control Modernization

The OIG has stated that U.S. airlines transport over 600 million passengers annually, and this number is expected to grow to over 900 million by 2010. To meet this demand for air travel and decrease the number of flight delays, FAA is modernizing the Nation's air traffic control system by acquiring a network of radar, automated information processing, navigation, and communications equipment. The OIG has listed several management challenges.

- Strengthen FAA's capacity to oversee multi-billion dollar software-intensive development efforts.
- Institute cost control mechanisms for software-intensive contracts to ensure products are delivered approximately on time and within agreed upon budget parameters.
- Identify and resolve human factors issues early in the acquisition process to avoid cost overruns and schedule delays.
- Definitize baseline plans for transitioning to satellite-based systems for communications, navigation, and surveillance.

The FAA has acknowledged this challenge and is engaged in a comprehensive program to modernize the air traffic control system. This includes replacement of controller workstations and automation software; replacement of radar surveillance systems; modernization of voice communication systems; and the introduction of

enhanced automation aids, data link, and improved weather systems. To address this challenge the FAA mobility agenda includes the following milestones which support achievement of outcomes 2, 3, and 5.

> *Milestone: Complete cost, schedule, and performance baselines for major acquisition programs and evaluate all capital portfolio investments. Any changes to acquisition program baselines must be reviewed and approved by the executive-level Joint Resources Council. (FY 2001)*
> *Milestone: Use of Earned Value Management for all appropriate acquisition programs. (FY 2001)*
> *Milestone: Continue implementation of FAA integrated Capability Maturity Model (iCMM) in targeted FAA acquisition programs to increase the number of programs certified at capability maturity level 2 and beyond. (FY 2002)*
> *Milestone: Ensure human factors policies, processes and procedures are integrated in the research and acquisition of 100 percent of FAA aviation systems and applications. (FY 2005)*
> *Milestone: Ensure that the FAA national airspace system architecture and capital investment plans are tied to FAA strategic plan goals.*
> *Milestone: The Administrator, the Deputy Administrator, and FAA senior management will meet at least quarterly to review all FAA Corporate Projects. Projects addressed will include key acquisitions and other projects associated with air traffic control modernization. Where projects are not on schedule/on target, agree upon actions to bring them back on track. (FY 2000-2005)*

7.3.2 Amtrak Financial Viability and Modernization

The OIG has stated that since 1971, Amtrak and Congress have shared a common goal of Amtrak's operating a national passenger rail system without federal operating assistance. The 1997 Amtrak Reform and Accountability Act (ARAA) mandated that Amtrak develop a plan to eliminate its need for federal operating support after FY 2002.

The FRA has acknowledged this issue and will pursue the following milestone in support of outcome 2.

> *Milestone: Acela high-speed service is expected to be introduced on the Northeast Corridor during 2000. No significant financial impact is expected in 2000 from the delay. The OIG is performing an assessment of Amtrak's 2000 business plan and will update the at risk numbers in 2000.*

7.4 Completed Program Evaluations

Mobility is defined in part by the condition and performance of the nation's transportation infrastructure. To estimate the level of investment needed in a key component of the system, DOT conducted a study of the cost to maintain or improve the mass transit system.

7.4.1 Status of the Nation's Transit Systems: Conditions and Performance

(FTA): The purpose of this evaluation was to report to Congress on the condition and operating performance of the Nation's public transit system. The report, published in March 2000, includes an estimate of the investment needed to maintain

and improve the system. The report revealed that the average annual capital investment necessary to maintain the mass transit systems in their current condition and operating performance is $10.8 billion in 1997 dollars and the cost of improving conditions and performance is $16.0 billion. This program evaluation contributed to our strategy for the efficient use of transportation resources, 7.2.1.c – "collaborate with public and private transportation providers to leverage financial resources…." in support of outcome 1.

7.5 External Factors

DOT used four scenarios[9] in the planning process to illustrate how external factors might impact mobility in the next 30 years. Globalization, demographics, the U.S. economy and the role of government were the major dimensions of the scenarios. We learned that these and many other external factors such as the political acumen of aging baby boomers, changing travel patterns, and the economic integration of larger regions, may play a part in our ability to achieve our mobility outcomes. Unable to predict how these complex external factors may interact to effect transportation, we have presented both positive and negative consequences of trends closely related to mobility.

7.5.1 Economic Factors

Cyclical and long-term changes in economic activity have a strong impact on the level of urban and intercity travel: economic growth increases travel but economic downturns decrease travel at the margins. (Impacts outcomes 1 – 5)

E-commerce and web enabled business will affect the nature of business-to-business transactions, the location of warehousing, shopping and travel, and traffic in residential areas because of increased freight deliveries to homes and businesses. (Impacts outcomes 1, 2 and 4)

7.5.2 Technological Factors

Improvements in the fuel efficiency of the automobile fleet, whether through new technologies such as hybrids, market-driven responses to increased gasoline prices, or changes in the preferences of consumers for smaller vehicles, would decrease gasoline use associated with a given level of travel, leading to reduced user-based revenues that fund DOT programs. (Impacts outcomes 1 and 5)

The development, adoption, and acceptance of intelligent transportation and navigation technologies may increase the carrying capacity of existing road networks and reduce the variability of travel times due to incidents. (Impacts outcomes 2, 3 and 4)

Technological improvements to alternatives to the internal combustion engine will affect the user cost of automobile use. (Impacts outcome 5)

7.5.3 Political Factors

Changes in government regulation of the transportation industry could affect their costs, willingness to deliver and the distribution of their services. Continuing the thrust of Vice President Gore's regulatory reform initiative will improve the performance of transportation providers. (Impacts outcome 5)

[9] DOT's global transportation scenarios are at www.dot.gov/stratplan

With the increasing population share of elderly persons and ethnic minorities will come increasing political power of these groups. To the extent that the mobility needs and desires of these groups differ from the current population mix, government transportation priorities may be altered. The aging of the population, urban sprawl and accessibility to jobs and services will increase the need for delivering efficient, affordable and accessible transport. (Impacts outcomes 2, 3, 4 and 5)

Changes in the nature of economic activity will affect the forces of agglomeration and urbanization which hold cities together, resulting in possible changes in the size and geographic distribution of urban areas. (Impacts outcomes 2 and 4)

7.5.4 Environmental Factors

Environmental concerns about preserving habitat or other natural places may limit future petroleum exploration and extraction and lead to decreases in available reserves. (Impacts outcome 5)

Environmental concerns may preclude or limit additions to or expansions of the existing transportation network, leading to deteriorating physical conditions and increased travel times and user costs. (Impacts outcomes 1 – 5)

Reducing greenhouse gas emissions likely requires reducing the use of fossil fuels, requiring some combination of decreased travel, improved vehicle fuel efficiency, or alternative propulsion technologies. (Impacts outcomes 2, 3, 4 and 5)

7.5.5 Social Factors

Regionalization of transportation systems will provide different population groups greater involvement in planning and increased access to those systems. (Impacts outcome 4)

Concerns about safe driving by young and elderly drivers may lead to greater restrictions on drivers' license privileges, requiring more public transit (including demand responsive services) and opportunities for walking and bicycling to provide for the mobility needs of these groups. (Impacts outcomes 2, 4 and 5)

Accessibility and meeting the physical and service needs for all the population is a challenge that will involve serving multiple generation households, families with children, persons with disabilities, and the retired and elderly. (Impacts outcomes 3 and 4)

Increases in the share of workers who telecommute part time or full time imply that the location and type of transportation necessary to support a given level of economic activity will change. (Impacts outcome 2, 3, 4 and 5)

Changes in urban land use preferences by residents and firms will affect future urban growth patterns and the type of transportation infrastructure and vehicles necessary to serve such patterns. (Impacts outcomes 1, 4 and 5)

7.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each mobility outcome in this Strategic Plan for 2000-2005 will be supported by one or more mobility performance measures fully developed in DOT's Annual Performance Plans for the fiscal years 2002-2005. There are three new mobility outcomes in this strategic plan that were not in DOT's 1997-2002 Strategic Plan. We understand that we will need to develop performance measures for these new outcomes .

DOT's Annual Performance Reports will provide targets, narrative and quantitative information on the extent to which we have achieved each of our mobility outcomes. Table 7.6 illustrates the relationships between the outcomes in the Strategic Plan and the measures in the Performance Plan. The measures presented in Table 7.6 are candidates for the Performance Plan and not final selections.

Table 7.6 Mobility Strategic Goal, Outcomes and Performance Plan Candidate Measures

"Shape an accessible, affordable, reliable transportation system for all people, goods and regions."

Outcomes	Performance Plan Candidate Measures
Improve the physical condition of the transportation system Reduce transportation time from origin to destination for the individual user Increase the reliability of trip times for the individual user Increase access to transportation systems for the individual user Reduce cost of transportation for the individual user	<u>Physical Condition</u> Percentage of miles on the National Highway System (NHS) that meet pavement performance standards for acceptable ride Percentage of bridges on the NHS that are deficient. Percent of runway pavement in good or fair condition (commercial service, reliever, and selected general aviation airports) Average condition of motor bus fleet Average condition of transit rail vehicle fleet <u>Time/Reliability</u> Hours of delay per 1000 vehicle miles traveled on federal-aid highways Aviation delays per 100,000 activities Percentage of ports reporting land and waterside impediments to flow of commerce Number of metropolitan areas where integrated ITS infrastructure is deployed Number of runways that are accessible in low visibility conditions <u>Accessibility</u> Percent of key transit rail stations that are ADA compliant. Percent of bus fleets that are ADA compliant <u>Cost</u> Amtrak intercity ridership

7.7 Data Capacity

The candidate performance measures in Table 7.6 above include measures utilized in DOT's 2001 Performance Plan and new candidate measures for mobility. DOT has developed data for each measure and has published source and accuracy statements for each of the data systems used in constructing these measures.[10] We have described the scope of each measure, the limitations of the data and the statistical issues regarding uncertainty in the measurement.[11] Led by the Bureau of Transportation Statistics (BTS), DOT's operating administrations are implementing a plan for verification and validation of all DOT data used in implementing GPRA and for other analytical purposes.[12] We are committed to continuous improvement in the accuracy, reliability and timeliness of mobility data and to publishing data in user-friendly formats that are understandable to people without transportation expertise. We will address the mobility data improvement issues described below.

Data Needs for Mobility
All mobility outcomes present complex measurement issues. Accordingly, DOT will: 1) develop a means of measuring user transportation cost, time, and reliability with time series data; 2) develop better approaches for measuring access; 3) develop a straightforward measure of congestion and its costs; 4) produce more timely and comprehensive data on the condition and use of the transportation system; and 5) develop a more complete understanding of variables influencing travel behavior.

7.8 Cross-Cutting Programs

DOT's staff collaborates with several federal agencies to coordinate and leverage resources on complementary projects and activities. Below we present a selection of our cross-cutting programs that are most directly aligned with our mobility outcomes.

7.8.1 Commuter Choice
Goal: Mitigate congestion and improve mobility by providing alternatives for driving to work alone. (Supports outcomes 2 and 5)
Agencies Involved: DOT/FTA lead, Departments of Health and Human Services and Labor, the Environmental Protection Agency, General Services Administration, Executive Office of the President, and Office of Personnel Management.

7.8.2 Access to Job and Reverse Commute
Goal: Assist individuals to move from welfare to work via access to transportation. (Supports outcomes 2, 4, and 5)
Agencies Involved: DOT/FTA lead, Departments of Housing and Urban Development, Health and Human Services, Agriculture and Labor, and the Small Business Administration.

7.8.3 All Weather Access to Airports
Goal: Increase the number of airport runways that are accessible in low visibility conditions. (Supports outcomes 1 and 3)
Agencies Involved: DOT/FAA lead, Department of Defense, National Oceanic and Atmospheric Administration, and the National Geodetic Survey.

[10] See www.bts.gov
[11] See Appendix I DOT 2001 Performance Plan
[12] See page 161 DOT 2001 Performance Plan

7.8.4 National Dredging Team

Goal: Improve the physical condition of the transportation system by dredging shipping channels. (Supports outcomes 1 and 3)
Agencies Involved: DOT/MARAD lead, Army Corps of Engineers, and the Environmental Protection Agency.

7.8.5 Maritime Transportation System

Goal: Advance maritime freight transportation in accordance with DOT's Maritime Transportation System initiative and TEA-21 provisions. (Supports outcomes 1 through 5)
Agencies Involved: DOT/MARAD and USCG co-leads, Army Corps of Engineers, Environmental Protection Agency, National Oceanic and Atmospheric Administration, National Fisheries Institute, the American Association of Port Authorities, the Intermodal Association of North America, the American Bureau of Shipping, and the National Industrial Transportation League.

8. Economic Growth Strategic Goal

"Support a transportation system that sustains America's economic growth"

8.1 Outcomes

1. Ensure that the Producer Price Index (PPI) for transportation services grows less rapidly than the overall PPI through the year 2005

2. Reduce barriers to trade that are related to transportation

3. Improve the U.S. international competitive position in transportation goods and services

4. Improve the capacity of the transportation workforce

5. Expand opportunities for all businesses, especially small, women-owned and disadvantaged businesses

8.2 Strategies

Supporting economic growth is one of the most basic purposes of our national transportation system. Transportation is the enabler that facilitates distribution and creates economic value for the producer. Access to transportation has grown considerably in the past seven years but there are areas of our country such as Appalachia, Native American lands and the Mississippi Delta region, that have urban and rural communities in which transportation is limited. President Clinton has called for "… a 21st century revolution to open new markets abroad and right here in America." We at DOT are acting to ensure that the transportation services needed to serve both our domestic and international markets are in place.

Our economic growth outcomes and strategies concern the effectiveness and efficiency of the United States transportation enterprise as a whole. The economic growth strategic goal complements DOT's mobility strategic goal that relates to the experience of the individual user.

Collaboration, innovation, commerce and the financial health of the transportation sector are very strong themes throughout our economic growth strategies. These subjects are growing in importance as the United States competes in a global economy and transportation either improves our competitive position or weakens it. Through the DOT International Policy Council, we develop and coordinate international programs and activities to support a range of U.S. government

initiatives around the world that require an efficient and safe global transportation system. For example, DOT is actively engaged in supporting trade and transportation initiatives in Africa, the Western Hemisphere, and the Asia Pacific Region. Beyond these regional efforts, several DOT initiatives will effectively support U.S. trade and commerce worldwide.

We will employ five broad strategies to achieve our economic growth outcomes. We will strive to 1) share the cost and risks of building and maintaining a transportation system to move people and goods efficiently at home and abroad; 2) maximize the productivity of the existing system; 3) support regulations and standards that sustain innovation and trade; 4) keep improving the system through analysis of timely information, and 5) accelerate the use of new technologies.

In contrast to the DOT safety strategies all of which supported our safety outcomes of reduced fatalities and injuries, our economic growth strategies are targeted to specific outcomes. The resources and programs listed in DOT's Performance Plan and budget are necessary to achieve the economic growth outcomes presented above and the strategies presented below. Each year, DOT reassesses its performance goals and targets based upon appropriations. The schedule for executing the strategies extends from the present through 2005. We will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service.

8.2.1 Investment Strategies: Share with stakeholders the cost and risk of building and maintaining a transportation system to move people and goods efficiently at home and abroad:

a. Develop and deploy new transportation technologies, including those that support navigation and e-commerce; (Supports outcomes 1 and 3)
b. Optimize all transportation system investments; (Supports outcomes 1, 3 and 5)
c. Encourage increased private sector investments in transportation, including the participation of small, women-owned, and disadvantaged businesses in DOT and DOT-assisted contracts and grants; and (Supports outcomes 1, 3 and 5)
d. Promote the multi-jurisdictional financing of intermodal facilities, including public and private transport infrastructure. (Supports outcomes 1 and 3)

8.2.2 Effectiveness Strategies: Build alliances to maximize the productivity of the transportation system:

a. Seek ways to improve the efficiency of the transportation system relative to peak usage through policies such as congestion pricing and through accurate forecasting of lifecycle and facility demands; (Supports outcomes 1 and 3)
b. Improve the performance of the transportation system though a pro-competitive agenda, including using federal investments to reduce entry barriers in key transportation markets; (Supports outcomes 1, 3 and 5)
c. Work with domestic and international stakeholders to ensure that infrastructure planning and development promotes improved intermodal connectivity, flexibility, timeliness and resistance to adverse weather; (Supports outcomes 1, 3 and 5)
d. Build alliances with domestic and international stakeholders to identify and minimize operating and investment barriers to interstate, interregional and international transportation; (Supports outcomes 1, 2, 3 and 5)

e. Collaborate with stakeholders to develop a long-term, conceptual vision of transportation technology and its implications for the transportation system and DOT; (Supports outcomes 1-5)
f. In partnership with academia, industry and labor, and other public and private entities, expand the availability and accessibility of transportation-relevant curricula at all learning levels to develop a workforce with the knowledge and skills necessary to design, deploy, operate, and maintain a 21st century transportation system; (Supports outcomes 1, 4 and 5)
g. Establish internships and mentoring programs in the transportation professions by working with all levels of government, industry, labor unions and the education community including minority serving institutions, to help assure that the future transportation workforce is globally competitive; (Supports outcome 4)
h. Work with other federal departments and agencies to recommend where government programs could be better aligned to support economic growth and to cooperate on U.S. global initiatives that support the economic growth of the U.S. and its trading partners; and (Supports outcome 2, 3 and 5)
i. Seek ways to ensure that the future structure of the transportation industry provides safe, profitable and competitive service, able to meet the needs of shippers, communities and industry employees. (Supports outcomes 1, 3, 4 and 5)

8.2.3 Strategies for Standards and Regulations: Advocate national and international standards and regulations that sustain innovation and trade by :

a. Working with the private sector to provide flexibility in regulations and standards to allow for innovation and incentives that improve transportation efficiency; (Supports outcomes 1,2, 3 and 5)
b. Advancing the development and deployment of international, intermodal logistics systems and intelligent transportation systems (ITS) architecture (i.e., systems, operations and protocols); (Supports outcomes 1, 3 and 5).
c. Promoting interstate, interregional and international cooperation by all transportation stakeholders to increase harmonization in policy, regulations, standards, operating practices, and technologies; and (Supports outcomes 1, 2 and 3)
d. Collaborating with stakeholders to establish and share information on world-class benchmarks useful in improving all aspects of transportation. (Supports outcomes 1, 2, 3 and 5)

8.2.4 Information and Analysis Strategies: Analyze and share information related to the effectiveness and efficiency of the transportation system:

a. Evaluate the system-level performance of the transportation enterprise in concert with state and local agencies, private providers of transportation and other stakeholders; (Supports outcomes 1 – 5)
b. Use emerging information technologies to increase the timeliness, validity and reliability of transportation data related to America's economic growth; (Supports outcomes 1 - 5)
c. Collect, analyze and disseminate transportation data and information that describe critical transportation trends and issues related to America's economic growth; and (Supports outcomes 1 - 5)
d. Collaborate with the private sector to develop an understanding of future industry trends and their implications for transportation in general and for all aspects of DOT's work. (Supports outcomes 1 – 5)

8.2.5 Research and Development Strategy: Partner with stakeholders to make dramatic improvements in the transportation system, in vehicles, and in user performance by accelerating the use of new technologies and fostering long-term, high-payoff research in all modes:

a. Develop a National Intelligent Transportation Infrastructure Architecture that includes all information needs of transportation including weather information; (Supports outcomes 1, 2 and 3)
b. Exploit modern sensing, modeling, computer, information and communications technologies, including the Global Positioning and Geographic Information Systems, to enable the rapid and seamless global movement of people, goods and services; (Supports outcomes 1, 2 and 3)
c. Research, develop and implement new "Free Flight" airspace management technologies that increase the ability of pilots to fly user-preferred routes; and (Supports outcomes 1, 2 and 3)
d. Research, develop and implement enhancements to the Global Positioning System (GPS), including the Wide Area Augmentation System (WAAS) and the Local Area Augmentation System (LAAS) for precision landing of aircraft. (Supports outcomes 1, 2 and 3)

8.3 Management Challenges

The strategies articulated in the preceding section represent our approach to challenges the transportation enterprise will confront in the future. However, we recognize that to achieve our Economic Growth strategic goal, we will need to address the priority management challenges identified by the GAO and DOT's OIG. In fact, the OIG has reinforced transportation's contribution to the economy by stating that "The replacement and new construction of transportation infrastructure is crucial to U.S. economic viability…." The language that describes each management challenge presented below is essentially the language used by the OIG.

8.3.1 Surface, Marine and Airport Infrastructure

The OIG has stated that since oversight of surface, marine and airport infrastructure projects (amounting to $50 billion in FY 2000), has shifted from the federal government to grantees, there is a need to apply best practices in federal oversight to major projects and find systemic solutions to problems. Acknowledging that DOT has taken steps to improve its management of infrastructure projects, the OIG has listed major areas requiring attention.

- Review outstanding obligations and deobligate funds no longer needed;
- Strengthen internal controls over cost estimates;
- Require and examine finance plans for all large infrastructure projects;
- Monitor project performance and mitigate funding risks to protect the government's financial interest as problems are identified;
- Promote owner-controlled insurance programs that can reduce program costs;
- Use design-build contracting when appropriate;
- Improve vigilance across the federal, state and grantee levels to prevent and detect fraud and corruption associated with TEA-21 funding; and
- Ensure that airport revenues are reasonably established, that funds are used for eligible purposes, and that airport sponsors require that annual audits include a review of airport revenue.

Surface Infrastructure

The FHWA has acknowledged that TEA-21's infusion of 45 percent additional funds into the Highway Trust Fund for the construction of transportation projects requires increased attention to the stewardship of these programs. To insure proper oversight, FHWA will take the actions presented below in support of outcomes 1 and 3.

Milestone: Form a major projects team to provide oversight and technical assistance to Division Offices. (FY 2000)
Milestone: Issue guidance for the development of Finance Plans for projects over $1 billion. (FY 2001)
Milestone: Issue regulations on the use of the design-build procurement process. (FY 2002)
Milestone: Beginning in FY 2000, deploy initiatives to increase the use of high performance materials for highway projects.
Milestone: By FY 2002, conduct reviews of the Highway Bridge Replacement and Rehabilitation Program with respect to eligibility and technical content.

FTA has acknowledged that ongoing oversight of transit projects is critical although the OIG has recognized that FTA's oversight program has improved in recent years. It is important for FTA to stay on this course especially in view of the infusion of capital investment in transit. The OIG has identified several management challenges: 1) the establishment of policies recording the level of project design that must be completed before a grant agreement can be approved; 2) establishment of criteria/or thresholds for determining whether additional federal funding can be approved as an amendment to an existing grant; and 3) criteria for financial plans. Resolution of this management challenge through the milestones below supports outcomes 1 and 3.

Milestone: FTA is implementing language contained in the FY 2000 Appropriations Conference Report regarding the level of project design and readiness for a full funding grant agreement (FFGA). In the 2000 New Starts report to Congress, we enunciated FTA's implementation of this guidance by saying "…firm funding commitments, embodied in FFGA, should not be made until the final process has progressed to the point where costs, benefits, and impacts are accurately known…" (FY 2000)
Milestone: FTA has established criteria to determine whether it is appropriate to amend an existing FFGA or whether a new FFGA is called for. (FY 2000)
Milestone: FTA will develop and issue detailed guidance for the development of financial plans for capital infrastructure projects. (FY 2000)
Milestone: FTA will use its project management oversight contractors (PMOC) to provide monthly reports on all phases of construction of transit projects. Tracking project contract costs and changes, and measures to control cost will remain part of the PMOC responsibility. (Ongoing)

Marine Infrastructure

MARAD and the USCG have acknowledged the challenges that will be faced in the future to revitalize the Nation's Marine Transportation System (MTS). America's MTS must adapt to the demands of moving increasing quantities of goods and people. By the year 2020, U.S. overseas trade—approximately 95 percent of which is carried by marine transportation—is projected to more than double. No other

system will be able to accommodate this growth. Actions in support of outcomes 1 and 3 are presented below.

Milestone: Establish the national level Interagency and Federal Advisory groups to plan, direct and oversee recommended actions at the federal and regional level. (FY 2000) These groups are to provide direction for public and private MTS stakeholders to consider evolving the current U.S. marine transportation system into the MTS desired in 2020. (FY 2001-2005)
Milestone: Establish local committees to deal with local issues. Create a method for elevating local issues, when necessary, to the national and/or regional level for recommendations. (FY 2000-2002) Local and regional committees should coordinate discussion and resolution of local and regional issues. The objective is to create a local coordinating body that can enhance communication and cooperation between localities and their encompassing regions. (FY 2003-2005)
Milestone: Complete the MTS Implementation Plan citing recommendations from the MTS Proceedings and Report for the five major agencies initially involved in the MTS initiative—MARAD, USCG, U.S. Army Corps of Engineers, National Oceanographic and Atmospheric Administration, and the Environmental Protection Agency. (FY 2000) Incorporate the activities of the other 18 agencies involved in the MTS initiative into the Implementation Plan. (FY 2001) Create industry/government partnerships to address areas where action is needed. (FY 2002 - 2005)
Milestone: Initiate a research and technology program for solving problems for MTS issues. Specific projects will be developed and funded on a priority basis, as funding becomes available. (FY 2001) Because any movement of cargo or passengers on water involves an associated landside movement, research focused on port access and the water/land intermodal connections is critical. (FY 2002-2005)

Airport Infrastructure
The FAA has acknowledged that oversight of Airport Improvement Program (AIP) projects is essential to ensure that the limited funds are working efficiently for the nation's airport system. The FAA has developed a comprehensive strategy to assure that projects funded by AIP are implemented on a timely basis. The oversight actions presented below support outcomes 1, 3 and 5.

Milestone: Screen proposed projects before issuing a grant agreement for the work. FAA policy is to have construction bids in hand by the grantee as a condition to issuing the grant.
Milestone: Monitor the progress of projects and stop projects if progress is inadequate.
Milestone: Close out grants when projects have been inactive for 18 months.
Milestone: Close out grants that are still open four years after the date of the agreement.

8.4 Completed Program Evaluations

Because many factors have changed that affect the equity and efficiency of the highway user fee structure, DOT conducted a program evaluation to determine whether the user fee structure should be modified.

8.4.1 Highway Cost Allocation Study (FHWA): This evaluation determined whether different vehicle classes were paying a proportionate share of highway program costs. The study concluded that there is no compelling need to adjust federal highway user tax rates to improve user fee equity at this time. We considered this evaluation and several external factors when we developed the investment strategies in section 8.2.1 in support of outcome 1.

8.5 External Factors

DOT used four global scenarios[13] in the planning process to illustrate how external factors might impact the transportation enterprise in the next 30 years. Globalization, demographics, the U.S. economy and the role of government were the major dimensions of the scenarios. We learned that international trade and travel, e-commerce, and the emerging role of international organizations are changing transportation in different ways and at an incredible speed. We expect these factors to play a part in our ability to achieve our economic growth outcomes. Unable to predict how these complex factors may interact, we have presented both positive and negative consequences.

8.5.1 Economic Factors

The globalization of commerce requires an efficient transportation system and is key to whether U.S. businesses will be competitive in the global marketplace. A loss of public support for global trade and the public transportation investments and activities that facilitate global trade would decrease the competitiveness of U.S. business in the global marketplace. (Impacts outcomes 1 - 5)

Investment in domestic and international transportation systems is key to survival in the global market place. Given the important role that transportation plays in commerce and tourism, if there is not greater private sector investment and improved coordination of public-private sector investment in domestic and international transportation systems, U.S. businesses will not be competitive in the global marketplace. (Impacts outcomes 1, 2 and 3)

Continuing deregulation as well as horizontal integration of the global transportation system across all modes of transport will be important in developing and sustaining a transportation system that supports global economic activity. Transportation has become part of supply chain management by allowing time compression, reliable delivery, just in time inventory control, and customization. (Impacts outcomes 1, 2 and 3)

8.5.2 Technology Factors

The evolution of technology will build new global transportation networks. The development and adoption of technologies will reflect two mutually reinforcing trends that build global networks of R&D, production, and marketing: (1) expanding international trade, foreign direct investment, and corporate alliances, and (2)

[13] DOT's global transportation scenarios are at www.dot.gov/stratplan

converging technological capabilities across national boundaries. (Impacts outcomes 1, 2, 3 and 5)

E-commerce and national competitiveness will drive the need for greater collaboration between the public and private sectors to ensure the integration and deployment of new technologies into the transportation system (including those related to advanced composites and materials, energy and the environment). Business to business e-commerce, estimated to be 10 times the volume of business to consumer, amounted to $100 billion in 1999 but is estimated to grow to between $1 trillion to $3 trillion in 2003—with huge demand implications for transportation. (Impacts outcomes 1, 2 and 3)

The extension of current information and communication technologies will provide universal access to a National Information Infrastructure (NII) regardless of the information's physical location. It will support the reduction of transportation cost and trip time variance and improved transportation timeliness. (Impacts outcomes 1, 2 and 3)

8.5.3 Political Factors

The role of the national government is changing with an ongoing shift away from top down, centralized decision-making and a shift towards increased state and local control of transportation. These trends could reverse if significant climate changes or if a rise in protectionism between international regional trading blocks were to occur. (Impacts outcomes 1, 2, and 3)

The changing regulatory climate is shifting toward minimizing national regulations, reducing international barriers to trade, and harmonizing international transportation regulations. This shift supports the reduction of transportation cost, trip time variance and improved transportation timeliness. (Impacts outcomes 1, 2, 3 and 4)

8.5.4 Environmental Factors

The changing impact of air, water and noise pollution is challenging transportation to control and minimize pollution or face a public backlash that may impede system improvement. (Impacts outcomes 1, 2 and 3)

Global climate change could result in warming and severe weather. The subsequent environmental and economic impact would likely cause a major reassessment of how we live and the role of transportation in our society. (Impacts outcomes 1, 2, 3 and 4)

Planning and development of transportation infrastructure that is resistant to environmentally caused damage (e.g., earthquakes, floods, etc.) is an increasing need and a new challenge. It will support the reduction of transportation cost and trip time variance and improved transportation timeliness. (Impacts outcomes 1, 2 and 3)

8.5.5 Social Factors

Trends such as the growth of the elderly population and increased demand for sale-to-door delivery of goods and services will require greater efficiency and flexibility of the transportation system. (Impacts outcomes 1, 2, and 3)

Population growth will strain demand on the transportation system and intensify competition for access to services. (Impacts outcomes 1 and 5)

New economic geography will require regionalization of transportation systems. There is likely to be pressure to provide historically uninvolved population groups

greater participation in transportation planning and increased access to those systems. (Impacts outcomes 1 - 5)

8.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each economic growth outcome in this Strategic Plan for 2000-2005 will be supported by one or more economic growth performance measures fully developed in DOT's Annual Performance Plans for FY 2001-2005. The economic growth goal has one new outcome that did not appear in DOT's 1997-2002 Strategic Plan – *Ensure that the Producer Price Index (PPI) for transportation services grows less rapidly than the overall PPI through 2005.* This outcome addresses the cost of transportation in the aggregate and reinforces our dedication to our original enabling legislation that calls for "…transportation at the lowest cost…." consistent with other national objectives. DOT's Annual Performance Reports will provide targets, narrative and quantitative informantion on the extent to which we have achieved our economic growth outcomes. Table 8.6 illustrates the relationships between the outcomes in the Strategic Plan and the measures in the Performance Plan. The measures presented in Table 8.6 are candidates for the Performance Plan and not final selections.

Table 8.6 Economic Growth Strategic Goal, Outcomes, and Performance Plan Candidate Measures

"Support a transportation system that sustains America's economic growth"

Outcomes	Performance Plan Candidate Measures
Ensure that the Producer Price Index (PPI) for transportation services grows less rapidly than the overall PPI through the year 2005	Cost of Transportation Percent change in the PPI for transportation services
Reduce barriers to trade that are related to transportation	Barriers to Trade Number of passengers (in millions) in international markets with open aviation agreements
Improve the U.S. international competitive position in transportation goods and services	Competitive Position of the US Gross tonnage (in thousands) of commercial vessels under construction in U.S. shipyards
Improve the capacity of the transportation workforce	Workforce Capacity Number of students graduating with transportation-related advanced degrees from universities receiving DOT funding Cumulative number of students (in thousands) reached through the Garrett A. Morgan Technology and Transportation Futures Program
Expand opportunities for all businesses, especially small, women-owned and disadvantaged businesses	Business Opportunity Percent share of the total dollar value of DOT direct contracts that are awarded to women-owned businesses Percent share of the total dollar value of DOT direct contracts that are awarded to small, disadvantaged businesses

8.7 Data Capacity

The candidate performance measures in Table 7.6 above include measures utilized in DOT's 2001 Performance Plan and new candidate measures. DOT has developed data for each measure and has published source and accuracy statements for each of the data systems used in constructing these measures.[14] We have described the scope of each measure, the limitations of the data and the statistical issues regarding uncertainty in the measurement.[15] Led by the Bureau of Transportation Statistics (BTS), DOT's Operating Administrations are implementing a plan for verification and validation of all departmental data used in implementing GPRA and for other analytical purposes.[16] DOT is committed to continuous improvement in the accuracy, reliability and timeliness of data related to the economic health of the nation and will address the data improvement issues described below.

Data Needs for Economic Growth
Aggregate or system level data that relate to the productivity, effectiveness and efficiency of the U.S. transportation system are needed to support the economic growth strategic goal. Resources permitting, we plan to collect, analyze and disseminate data and information that identify critical trends and issues relating to the nexus of transportation and the economy. We will: 1) develop a means of measuring transportation cost, time, and reliability – at an aggregate level – with time series data; 2) develop a comprehensive measure of the transportation capital stock; 3) improve our view of changes in the transportation workforce; 4) develop better measures of productivity in the transportation sector, and other issues concerning use of the PPI; and 5) develop a better picture of transportation-related variables that influence global competitiveness.

8.8 Cross-Cutting Programs

DOT collaborates on a regular basis with other federal agencies on a wide-range of transportation issues that directly support economic growth. As globalization intensifies, there is more DOT international involvement with the rapidly increasing flow of commerce, business travel and tourism. For this section of the plan, we have selected partnerships that are closely aligned with our economic growth outcomes.

8.8.1 Garrett A. Morgan Technology and Transportation Futures Program

Goal: To interest students of all ages in transportation careers and to ensure that they have the knowledge and skills to pursue them. (Supports outcome 4)
Agencies Involved: DOT/RSPA lead, all DOT agencies, Departments of Education and Labor, National School-to-Work Office.

8.8.2 International Transportation Issues

Goal: To develop, coordinate and implement DOT's international transportation and trade policies and ensure that the U.S. transportation system supports America's economic growth, the competitiveness of the U.S. transportation industry, and rapidly expanding global trade and tourism. (Supports outcomes 2 and 3)
Agencies Involved: DOT/Office of International Transportation and Trade lead, Office of the U.S. Trade Representative, the Departments of Commerce and State, the Export-Import Bank and other international organizations.

[14] See www.bts.gov
[15] See Appendix I DOT 2001 Performance Plan
[16] See page 161 DOT 2001 Performance Plan

8.8.3 Enhanced Gateway Initiative

Goal: To implement strategies that will alleviate impediments to the flow of commerce. (Supports outcome 2)
Agencies Involved: DOT/FHWA lead, National Science and the Technology Council.

8.8.4 Uniform International and Domestic Standards for the Maritime Industry

Goal: To reduce barriers to trade related to transportation. (Supports outcome 2)
Agencies Involved: DOT/USCG lead, International Maritime Organization, Departments of State, Treasury, Agriculture, Commerce, U.S. Trade Representative, U.S. Customs Service.

8.8.5 Lower Mississippi Delta Initiative

Goal: To advance economic opportunities for an area that encompasses 219 counties and parishes in Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee by improving the quality of life and promoting the region's advancement. (Supports outcomes 1, 3, 4, and 5)
Agencies Involved: DOT Office of Policy lead, the White House, the Departments of Agriculture, Commerce, Housing and Urban Development, Health and Human Services, Labor, Education, and the Interior; the Small Business Administration and the Environmental Protection Agency.

8.8.6 Small Business

Goal: To expand opportunities for small, women-owned and disadvantaged businesses in DOT and DOT-assisted contracts and grants. (Supports outcomes 1, 3 and 5)
Agencies Involved: DOT Office of Small and Disadvantaged Business Utilization lead, all federal Departments with focused coordination with the Small Business Administration, the Department of Commerce, the General Services Administration and the Office of Management and Budget.

9. Human and Natural Environment Strategic Goal

"Protect and enhance communities and the natural environment affected by transportation"

9.1 Outcomes

1. Improve the sustainability and livability of all communities
2. Reduce the adverse effects of transportation on ecosystems and the natural environment
3. Improve the viability of ecosystems
4. Reduce the adverse effects of transportation facilities on the human environment
5. Improve equity for low income and minority communities concerning the benefits and burdens of transportation facilities and services
6. Reduce the amount of pollution from transportation sources

9.2 Strategies

Transportation is the tie that binds us together as a nation. But transportation also can have the unwanted side effects of air and noise pollution as well as the loss of valuable ecosystems. We are committed to avoiding or mitigating the adverse environmental effects that can accompany transportation to the greatest degree possible.

Our Human and Natural Environment strategies are directed toward making DOT more effective in fulfilling its responsibilities as one of the federal stewards of the environment. The strategies emphasize DOT's collaboration with the public, all levels of government,[17] and private sector stakeholders to identify and integrate the full range of environmental and community concerns into policies, operations, investments, regulations and research. These concerns include impacts of transportation with respect to the global commons, environmental justice and integrating bicycling and walking into the transportation system.

We will execute six multi-modal strategies to achieve the environmental outcomes presented above. We will: 1) advocate early, continuous, and collaborative

[17] i.e., other federal agencies, tribes, state and local governments, and Metropolitan Planning Organizations.

transportation planning; 2) work proactively with government and industry in the United States and internationally to set environmental standards and enforce environmental policies and laws; 3) foster dialogue, education and communication about transportation alternatives; 4) sponsor interdisciplinary research on connections between transportation and the environment; 5) improve information on transportation and the environment and 6) create incentives to avoid or mitigate the adverse environmental effects that can accompany transportation.

In contrast to the DOT safety strategies all of which supported our safety outcomes of reduced fatalities and injuries, our environment strategies are targeted to specific outcomes. The resources and programs listed in DOT's Performance Plan and budget are necessary to achieve the environment outcomes presented above and the strategies presented below. Each year, DOT reassesses its performance goals and targets based upon appropriations. The schedule for executing the strategies extends from the present through 2005. We will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service.

9.2.1 Infrastructure and Investment Strategies:

a. Form alliances for public and private investment in transportation facilities and services to make communities more livable by helping them link growth strategies, land use plans, safety, environmental quality and economic development; (Supports outcomes 1, 4 and 5)
b. Help all levels of government and communities find ways to use transportation more effectively through planning techniques and operations that are sustainable, community friendly, improve environmental protection, environmental justice and scenic qualities; (Supports outcomes 1, 2 and 4)
c. Advance environmentally preferable transportation solutions, such as pedestrian travel, bicycling, mass transit and virtual travel, as alternatives to personal vehicle use; (Supports outcomes 1, 2, 4 and 5)
d. Support, leverage and broker public and private investments in transportation by integrating economic development, environmental viability and social equity; (Supports outcomes 1-5)
e. Promote public involvement in planning and ensure compliance with Title VI of the Civil Rights Act to reduce adverse impacts of transportation infrastructure and operations on minority and low-income communities and ensure the equitable distribution of transportation facilities and services. (Supports outcomes 1 and 4)
f. Work with other agencies to improve and streamline the environmental review process while improving environmental protection; and (Supports outcomes 2 and 3)
g. Improve DOT-owned or controlled facilities for the benefit of host communities by preventing pollution, recycling, using recycled products, and cleaning up contaminated facilities. (Supports outcomes 2, 4 and 5)

9.2.2 Strategies for Standards and Enforcement:

a. Protect indigenous species, ecosystems and communities by developing civil rights and environmental regulations and standards in partnership with stakeholders such as other federal agencies, tribal nations, states, metropolitan planning organizations, local governments and interest groups. (Supports outcomes 1-5)

b. Work with other federal agencies, state and local governments and the private sector to ensure readiness, availability, and coordination of resources and capacity to respond to incidents of environmental damage and natural resource degradation. (Supports outcomes 1, 2 and 4)
c. Work with all levels of government and the private sector to participate in environmental policy negotiations and the formation of international agreements and institutions that affect transportation. (Supports outcome 2)
d. Develop and maintain regional and international agreements with other nations, federal, state and local governments and the private sector to improve the coordination and effectiveness of law enforcement efforts that protect ecosystems. (Supports outcome 2)
e. With public and private partners, identify and counter threats to ecosystems and the natural environment through improved pollution prevention and response activities. (Supports outcomes 2 and 3)

9.2.3 Communication, Education and Outreach Strategies:

a. Work with other agencies, the public and institutions to teach the next generation about the environmental impact of individual transportation decisions. (Supports outcome 1)
b. Provide timely information to the public in various useful and understandable formats about transportation's impact on the environment including but not limited to:
   - transportation alternatives such as bicycling and walking to help communities make choices;
   - benefits of reducing transportation-related pollutants (air, land and water) into the environment; and
   - adverse environmental effects of siting, construction, and operation of transportation facilities and systems. (Supports outcome 1)
c. Work with federal, state and local agencies to reduce public health and environmental risks related to transportation projects and systems. (Supports outcomes 1 and 4)
d. Foster dialogue among local, minority and low-income communities, state and tribal governments, private sector stakeholders and the public in developing metropolitan and statewide transportation plans (including intermodal, port and airport plans) to improve consideration of public health, social, environmental, and economic factors in transportation planning as well as equitable distribution of transportation benefits. (Supports outcomes 1 and 4)

9.2.4 Research and Development Strategies:

a. Work with all levels of government, the public and the private sector to develop and execute a strategic, interdisciplinary research agenda on the environmental impacts of all modes of transportation including research on renewable fuel sources, zero-emission propulsion systems and advanced monitoring of transportation-related pollution and energy use. (Supports outcomes 1, 2, 3, 4 and 6)
b. Support the development, demonstration and rapid deployment of transportation technologies for energy efficient and environmentally compatible transportation and propulsion systems. (Supports outcomes 1 and 5)
c. Conduct research on technologies that will reduce the waste, pollution and emissions generated in the production of infrastructure materials. (Supports outcomes 2, 4 and 6)

9.2.5 Analysis and Information Strategies:

a. Increase the timeliness, validity and reliability of transportation data related to the human and natural environment by taking advantage of web-enabled technologies. (Supports outcome 5)

b. Collect, analyze and publish transportation data and information in various useful and understandable formats to identify critical environmental trends and issues and the health and physical impacts of transportation projects on communities. (Supports outcome 1)

9.2.6 Incentives Strategy: Build alliances to create incentives for avoiding or mitigating the adverse environmental effects that can accompany transportation.

a. Develop incentives for innovations in transportation vehicles, infrastructure and equipment that pollute less and cause less damage to the environment. (Supports outcomes 1, 2, 3 and 6)

b. Create incentives for developing and using alternative fuels, alternative transportation modes, and increasing fuel efficiency gains. (Supports outcomes 2 and 6)

9.3 Management Challenges

The strategies presented in the preceding section represent our approach to the environmental challenges to transportation in the future. However, we recognize that achievement of our Human and Natural Environment outcomes is contingent upon addressing the priority management issues identified by the GAO and DOT's OIG which are discussed below. The language that describes each challenge is essentially the language used by the OIG.

9.3.1 MARAD Ship Disposal Program

The OIG has noted that MARAD is required, by legislative mandate, to dispose of obsolete vessels in the National Defense Reserve Fleet (NDRF) by September 30, 2001 in a manner that maximizes financial return to the U.S. Previously, MARAD sold the vessels overseas for scrapping. Since 1994, MARAD has refrained from exporting these vessels because of concerns about the environment, and worker health and safety. As a result, MARAD has incurred additional costs to maintain the ships prior to their sale and disposal in the U.S. where there is only a small domestic ship scrapping industry.

The OIG observed that the federal government faces a challenge in disposing of its fleet of obsolete vessels in a timely manner. Environmental dangers associated with MARAD's deteriorating vessels increase daily. The requirement to maximize financial returns in their disposal may not work in today's marketplace. In 1999, the NDRF contained 112 vessels designated for priority disposal and MARAD expects its inventory to increase by 2001 if no additional vessels are sold.

MARAD has acknowledged this environmental challenge and has set a performance goal to meet it in support of outcomes 2, 4 and 6.

Milestone: MARAD will reduce the inventory of obsolete vessels in the NRDF. Additionally, MARAD is developing an action plan which will propose specific achievement milestones that will be incorporated into the DOT and MARAD FY 2002 Performance Plans.

9.4 Completed Program Evaluations

DOT has evaluated four key programs to determine their effectiveness in avoiding or mitigating the adverse environmental effects that can accompany transportation. The results of the evaluations are presented below.

9.4.1 Livable Communities Evaluation (FTA): The purpose of the Livable Communities Initiative (LCI) is to improve the quality of life in urban and rural communities through the use of transit systems. The objective of the evaluation was to document the impact of the concepts demonstrated by the 16 Livable Communities projects on the attainment of the LCI goals. The sixteen projects involved a variety of concepts designed to link transit and its immediate communities by improving personal mobility, transportation system performance, access to community services and the quality of life. The evaluation found community involvement in the planning process; leveraged resources for transit improvement; planning for travel outside the project area; and institutionalization of the concepts. As a result of this evaluation, there are now several programs and policies that reflect Livable Communities concepts, including several concepts that have been incorporated in TEA-21 and in several of our strategies especially in section 9.2.1 in support of outcomes 1 and 4.

9.4.2 Fisheries Law Enforcement Deterrence Study (USCG): This study used historical search and rescue demand data as well as historically based estimates of other workload to assess whether the USCG has allocated small boats to shore stations in the most effective manner. Findings indicated that the majority of USCG stations may have a shortage of available boat capability to meet current and estimated demand but a few stations may have excess boat capability which can be reallocated to stations with shortages. USCG will reallocate as appropriate. We considered this study as we developed our strategy 9.2.2.b that addresses the readiness, availability and coordination of resources to respond to incidents of environmental degradation in support of outcome 4.

9.4.3 Ocean Guardian Strategic Plan (USCG): This evaluation identified the need to: ensure a strong national constituency base; to develop clear, easily enforceable regulations; and to tailor the application of fishery management and enforcement tools. Ocean Guardian provides guidance to field commanders to ensure our enforcement actions are consistent and supportive of national interests. The study also validated that USCG operations are still consistent with recommendations of the USCG 1993 Fisheries Study. We considered the results of this evaluation as we developed our environmental strategies that address standards and enforcement. Section 9.2.2 calls for protecting indigenous species and ecosystems in partnership with an ever expanding constituency base in support of outcome 2.

9.4.4 National Bicycling and Walking Study Five Year Progress Report: In 1994, DOT adopted the National Bicycling and Walking Study with the twin goals of increasing use and improving safety for these two modes. A five year progress report released in 1999 found that while significant progress had been made, DOT must renew its commitment to elevating bicycling and walking to become part of the

transportation mainstream as evidenced by several strategies in this plan such as 9.2.1.c and 9.2.3.b in support of outcomes 1 and 4.

9.5 External Factors

DOT used four scenarios[18] in the planning process to illustrate how external factors might play a part in our achieving our environmental outcomes. Globalization, demographics, the U.S. economy and the role of government were the major dimensions of the scenarios. We learned that these and many other external factors such as global climate change, traffic congestion, air pollution, new technology and land use may effect our ability to achieve our environmental outcome goals. Unable to predict how these complex external factors may interact to effect transportation, we have presented both positive and negative consequences.

9.5.1 Ecological Factors

Global warming could become more severe. As a result, there could be increased public pressure to reduce emissions from transportation sources. The four warmest years on record since 1860 have all occurred since 1990. In some areas, primarily over continents, the warming has been several times greater than the global average. Other evidence of global temperature increases since the nineteenth century includes the observed rise in sea level of 10 to 25 centimeters (about four to 10 inches), the shrinkage of mountain glaciers, a reduction of northern hemisphere snow cover (1973 to present), and increasing sub-surface ground temperatures. The burning of coal, oil, and natural gas, as well as deforestation and various agricultural and industrial practices, are altering the composition of the atmosphere and contributing to climate change. These human activities have led to increased atmosphere concentrations of a number of greenhouse gases, including carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons in the lower part of the atmosphere. (Impacts outcomes 2 and 6)

Transportation faces a significant challenge to control and minimize air, water, and noise pollution or face a public backlash that may impede system improvement. There may be non-air quality environmental and social impacts resulting from otherwise desirous advances in low- to no-emission transportation technologies (i.e., hybrid and fuel cell drive trains). With the advent of hybrids, air quality improves and people may drive more rather than less. With more driving may come increased pressure on land and water use, more congestion, and other adverse effects. Transportation planning should take this likelihood into account. (Impacts outcomes 1, 4, 5 and 6)

Planning and development of transportation infrastructure that is resistant to environmentally caused damage (e.g. earthquakes, floods, etc.) is an increasing need and new challenge. It will support the reduction of transportation cost and trip time variance and improved transportation timeliness. (Impacts outcomes 1, 2 and 3)

Limited petroleum reserves and environmental concerns may curtail future petroleum exploration and extraction and lead to decreases in available reserves. (Impacts outcomes 1, 5 and 6)

[18] DOT's global transportation scenarios are at www.dot.gov/stratplan

9.5.2 Technology Factors

Advances in fuel cells and blended fuel engines for automobiles will take mileage up to 70-80 miles per gallon. The availability of ultra-clean fuel cells for cars whose only by-product will be water clean enough to drink, should reduce transportation's contribution to global climate change. Research to develop cleaner fuels such as fuels with lower sulfur content is proceeding and regulatory requirements for cleaner fuels are in place or being developed. The challenge is to ensure that improvements in one area do not lead to increased pollution in another area. Tradeoffs must be balanced as we make technical progress. (Impacts outcomes 2, 3 and 6)

Traffic congestion and air quality are becoming major challenges that require solutions not only for our largest metropolitan areas, but for mid-size cities as well. Cities that were once considered the most-desired places to live or for businesses to locate – places like Atlanta, Denver, or Milwaukee – are now seeking ways to unclog their increasingly congested roadways and regain their quality of life. (Impacts outcomes 1, 2, 4, 5 and 6)

E-commerce and national competitiveness will drive the need for greater collaboration between the public and private sectors to ensure the integration and deployment of new technologies into the transportation system (including those related to advanced composites, energy and the environment). Business-to-business e-commerce, estimated to be 10 times the volume of business-to-consumer, amounted to $100 billion in 1999 but is estimated to grow to between $1 trillion to $3 trillion in 2003 – with huge demand implications for transportation. (Impacts outcomes 1-6)

9.5.3 Political Factors

The role of national government is changing with an ongoing shift away from top down centralized decision-making and a shift towards increased state and local control of transportation. These trends could reverse if significant climate changes or if a rise in protectionism between international regional trading blocks were to occur. (Impacts outcomes 1-6)

The changing regulatory climate is shifting toward minimizing national regulations, reducing international barriers to trade, and harmonizing international transportation regulations. This shift supports the reduction of transportation cost and trip time variance and improved transportation timeliness. Globalization may impact DOT's ability to regulate pollutants produced by transportation sources. (Impacts outcomes 1-6)

The forces of agglomeration and urbanization that hold cities together may be affected by the nature of economic activity, resulting in possible changes in the size and geographic distribution of urban areas, development of economically integrated regions and an increase the use of and exposure to risks in the transportation system. (Impacts outcomes 1, 4 and 5)

Transportation infrastructure additions or expansions of the existing transportation network may be limited due to environmental concerns, leading to deteriorating physical conditions and increased travel times and user costs. (Impacts outcomes 1, 4 and 5)

Changing demographics in the immigrant and the elderly populations will introduce new cultural norms that will affect the way communities form, organize and use transportation. (Impacts outcome 1)

9.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each environmental outcome in the Strategic Plan for 2000-2005 will be supported by one or more environmental performance measures fully developed in DOT's Annual Performance Plans for the fiscal years 2001-2005. Table 9.6 illustrates the relationships between the outcomes in the Strategic Plan and the measures in the Performance Plan. The measures presented in Table 9.6 are candidates for the Performance Plan and not final selections.

Table 9.6 Human and Natural Environment Strategic Goal, Outcomes and Performance Plan Candidate Measures

"Protect and enhance communities and the natural environment affected by transportation"

Outcomes	Performance Plan Candidate Measures
Improve the sustainability and livability of all communities Reduce the adverse effects of transportation on ecosystems and the natural environment Improve the viability of ecosystems Reduce the adverse effects of transportation on the human environment Improve equity for low income and minority communities concerning the benefits and burdens of transportation facilities and services Reduce the amount of pollution from transportation sources	<u>Sustainability/Livability</u> Percent of urban population living within a quarter mile of transit stop with average headway of 15 minutes or less (non-rush hour) Billion transit passenger miles traveled <u>Adverse Effects</u> Percentage of DOT facilities categorized as No Further Remedial Action Planned under the Superfund Amendments and Reauthorization Act Acres of wetlands replaced for every acre affected by federal-aid highway projects (where impacts are unavoidable) <u>Ecosystems</u> Percent change in number of species that are designated as over-fished <u>Environmental Justice/Equity</u> Number of environmental justice complaint cases that remain unresolved after one year <u>Pollution</u> Tons (in millions) of mobile source emissions from on-road motor vehicles Metric tons (in millions) of carbon equivalent emissions from transportation sources Number of people in the U.S. (in thousands) who are exposed to significant noise levels (65 decibels or more) Gallons spilled per million gallons shipped, by maritime sources Tons of hazardous liquid materials spilled per million ton-miles shipped by pipeline

9.7 Data Capacity

The candidate performance measures in Table 7.6 above include measures utilized in DOT's 2001 Performance Plan and new candidate measures. DOT has developed data for each measure and has published source and accuracy statements for each of the data systems used for constructing these measures.[19] We have described the scope of each measure, the limitations of the data and the statistical issues regarding uncertainty in the measurement.[20] Led by the Bureau of Transportation Statistics (BTS), DOT's operating administrations are implementing a plan for verification and validation of all departmental data used in implementing GPRA and for other analytical purposes.[21] DOT is committed to continuous improvement in the accuracy, reliability and timeliness of environmental data relating to transportation and will execute the improvements presented below.

Data Needs for Human and Natural Environment
DOT's environment outcomes present difficult measurement issues and new frontiers in terms of data we have collected historically. Our challenge is to measure the results we want to achieve against our goals. Accordingly, resources permitting, we will: 1) develop comparable and complete data on transportation emissions, noise, hazardous materials releases, and wetlands impacts; 2) improve our understanding of collateral damage to the human natural environment; 3) create better leading indicators for potential environmental issues; and 4) develop a reliable method of measuring the use of bicycling and walking.

9.8 Cross-Cutting Programs

DOT collaborates with other federal agencies on a variety of programs concerning the environment. Regularly, DOT staff communicates and meets with other agencies to align policies, goals, regulations, process, field work and events that advance these initiatives. For this section of the plan, we have selected partnerships that are most directly aligned with our environment strategic goal and outcomes.

9.8.1 Environmental Justice

Goal: Identify and address disproportionately high and adverse human health and environmental effects of transportation policies and programs on minority populations and low-income populations. (Supports outcome 5)
Agencies Involved: DOT/Office of Civil Rights lead, Environmental Protection Agency, Departments of Health and Human Services and Justice, National Institutes of Health, Bureau of the Census, state government, civil rights groups, and minority and low income populations.

9.8.2 National Millennium Trails

Goal: A national initiative to create, enhance, and celebrate more than 2,000 trails as part of America's legacy for the future. Partners from cultural, heritage and trail organizations in the public and private sectors are working together to create a national network of trails. (Supports outcome 1)
Agencies Involved: DOT Office of Policy Lead, White House Millennium Council, Department of the Interior, public and private trail organizations.

[19] See www.bts.gov
[20] See Appendix I DOT 2001 Performance Plan
[21] See page 161 DOT 2001 Performance Plan

9.8.3 Center for Climate Change and Environmental Forecasting

Goals: To address environmental and climate change concerns through an intermodal systems approach; to enable the transportation sector to contribute to national goals for greenhouse gas reductions; and to ensure that the nation's transportation systems are prepared to address the potential long-range effects of global climate change. (Supports outcomes 2, 4 and 6)
Agencies Involved: DOT/Office of Policy Lead, White House Task Force on Climate Change, the Departments of State, Energy and Agriculture, and National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, and the Environmental Protection Agency.

9.8.4 Environmental Streamlining

Goal: To shorten the time for transportation project delivery by making the environmental analysis and approval process more efficient. (Supports outcomes 1 and 4)
Agencies Involved: Departments of Transportation, Agriculture, Interior and Commerce; the Environmental Protection Agency, U.S. Army Corps of Engineers and the Advisory Council on Historic Preservation.

9.8.5 National Park Overflight

Goal: Develop and implement policy concerning overflight of national parks that balances environmental and safety issues with the needs of air tour operators and others who fly over national parks. (Supports outcome 2)
Agencies Involved: DOT/Federal Aviation Administration lead, Department of Interior/National Park Service.

10. National Security Strategic Goal

"Ensure the security of the transportation system for the movement of people and goods, and support the National Security Strategy"

10.1 Outcomes

1. Reduce the vulnerability of the transportation system and its users to crime and terrorism
2. Increase the capability of the transportation system to meet national defense needs
3. Reduce the flow of illegal drugs entering the United States
4. Reduce the flow of migrants illegally entering the United States
5. Reduce illegal incursions into our sovereign territory
6. Increase support for United States interests in promoting regional stability
7. Reduce transportation-related dependence on foreign fuel supplies

10.2 Strategies

DOT's national security strategies show how we will address security threats that have existed for a long time as well as threats that have emerged more recently. They reflect our ONE DOT philosophy which stresses partnerships, collaboration and taking steps to create a climate of innovation. They address military contingencies, disaster response, drugs, illegal migration, and new communications technologies. Security is an important aspect of transportation: transportation is the vital link to mobilizing materials and our armed forces to defend the nation; and transportation is first in the civilian emergency response action agenda.

As we move into the information age, we are increasingly concerned with security strategies that address information assurance and protection. Those efforts reflecting DOT's partnerships with the transportation industry to protect command and control and communications systems are addressed in the national security section of the plan. However, strategies that reflect DOT's commitment to protect internal

information systems and DOT's information assets are presented under the organizational excellence section.[22]

DOT will employ six key strategies to achieve our National Security outcomes. We will: 1) take several steps to protect the transportation system from security threats; 2) secure the borders of the United States; 3) foster public awareness and acceptance of transportation security; 4) promote international standards for transportation security; 5) support the development of new security technologies; and 6) share timely information on security issues with stakeholders.

In contrast to the DOT safety strategies all of which supported our safety outcomes of reduced fatalities and injuries, our national security strategies are targeted to specific outcomes. The resources and programs listed in DOT's Annual Performance Plan and budget are necessary to achieve the national security outcomes presented above and execute the strategies presented below. Each year, DOT reassesses its performance goals and targets based upon appropriations. The schedule for executing the strategies extends from the present through 2005. With respect to processes and technology, we will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service.

10.2.1 Infrastructure Strategies: Work in partnership with other federal agencies, state and local governments, international organizations, and the private sector to:

a. Identify and reduce the vulnerabilities of all modes of transportation to security threats; (Supports outcomes 1 and 2)
b. Detect and counter threats to the security of the transportation system; (Supports outcomes 1 and 2)
c. Ensure that the national transportation system maintains the resources and capacity needed to support national defense requirements and assist in disaster response and recovery efforts; (Supports outcomes 2 and 5)
d. Develop, test and evaluate plans for the expeditious and efficient intermodal movement of personnel and materiel from origin to destination during military contingencies and disaster response; (Supports outcome 2)
e. Work in partnership with other federal agencies, state and local government, international organizations, and the private sector to implement an integrated transportation security R&D program tailored to threats and vulnerabilities including software assurance, high confidence systems, and real-time chemical and biological detection; (Supports outcomes 1 and 2)
f. Promote performance-based standards developed in close coordination with industry to address their cost, throughput and portability needs; and
g. Advance cost-shared, public-private partnerships to accelerate the development, demonstration and deployment of new security technologies and systems. (Supports outcomes 1 and 2)

10.2.2 Strategies to Secure U.S. Borders: Work in partnership with federal agencies, state and local governments to optimize the use of DOT assets and increase the effectiveness of procedures, protocols and communications to :

a. Reduce the flow of illegal drugs into the U.S.; and (Supports outcomes 3 and 5)

[22] See section 11.2

b. Reduce the flow of migrants illegally entering the U.S. (Supports outcomes 4 and 5)

10.2.3 Customer Focus and Communications Strategies:

a. Promote education and outreach programs designed to foster an awareness and acceptance of effective security measures within all transportation modes in collaboration with a wide range of public and private organizations. (Supports outcomes 1, 3 and 4)
b. Employ advancements in communications technology to improve the speed, accuracy and simplicity of the exchange of security, emergency response, and defense deployment information with federal, state and local governments and the private sector. (Supports outcomes 1-7)
c. Provide nation-building assistance in support of U.S. foreign policy to help foreign governments improve their critical security and transportation infrastructures. (Supports outcomes 1 and 6)

10.2.4 Guidelines, Best Practices and Standards Strategies: Establish public/private partnerships to :

a. Develop and promulgate domestic and international transportation security guidelines, recommended procedures, best practices and standards; and . (Supports outcomes 1 - 7)
b. Support or propose legislation designed to safeguard the Nation against criminal and terrorist activity in the transportation sector. (Supports outcomes 1 - 7)

10.2.5 Research and Development Strategies: Work in partnership with other Federal agencies, state and local government, international organizations, and the private sector to:

a. Support and implement an integrated transportation security R&D program tailored to threats and vulnerabilities in all modes that includes software assurance, high confidence systems and real time chemical and biological detection; (Supports outcomes 1 and 2)
b. Support development of new technologies to detect, disrupt and deter the illegal transportation of drugs and illegal migrants into and within the U.S. and at U.S. borders; and (Supports outcomes 3, 4 and 5)
c. Promote research and development on alternative energy sources and the use of energy efficient technologies. (Supports outcome 7)

10.2.6 Information and Analysis Strategies: Collect and share information on security issues and trends with those who can improve the security of the transportation system and advance our national security interests through:

a. Use of web-enabled and other technologies to improve the timeliness, validity and reliability of transportation data related to security; (Supports outcomes 1 - 7)
b. Collection, analysis and publication of data and information to identify and update critical security and national security trends and issues using formats understandable to security specialists and to the public; and (Supports outcomes 1 - 7)
c. Creation of an industry-DOT partnership to resolve information sharing issues, and to develop standards, best practices and guidelines for performance measurement. (Supports outcomes 1 - 7)

10.3 Management Challenges

The strategies outlined in the previous section represent our approach to the performance challenges of the future. However, we acknowledge that achievement of our National Security outcomes is contingent upon resolving the priority management issues identified by the GAO and DOT's OIG. The OIG identified management challenges affecting transportation and computer security, including the security of aviation, surface transportation, and critical information technology (IT) assets. The language that describes each challenge is essentially the language used by the OIG.

10.3.1 Transportation Security

The OIG has noted that DOT needs to ensure that the transportation system is secure. He observed that the changing threat of terrorist and other criminal activities has heightened the need to improve domestic transportation security.

DOT has acknowledged the changing nature of transportation security and the increasing importance of security issues by creating a stand-alone national security strategic goal in its 1997 Strategic Plan. Previously, DOT had considered security as part of transportation safety. In the three years since the 1997 Plan was published, security has taken on new, even menacing, global dimensions. Although addressing security issues has become even more crucial to DOT, several important management challenges require attention.

Aviation

The FAA has acknowledged the security challenge. Following the recommendations of the White House Commission on Aviation Safety and Security, FAA will expand its research to develop better technology and procedures to prevent weapons and explosive devices from being taken aboard commercial aircraft. Working with airlines and airports, FAA will continue to purchase and deploy advanced aviation security equipment, monitor its use, and test and assess performance of security programs including access control and cargo. The planned certification of screening companies is expected to increase levels of screener professionalism. FAA will continue to promote formation of airport security consortia. The performance-based approach to industry compliance with security requirements will encourage partnering to improve aviation security. The following milestones address challenges in aviation security in support of outcome 1.

Milestone: FAA will publish a final rule setting performance standards for certification of security screening companies based on the ability to identify threat objects projected onto screens using Threat Image Projection (TIP). (FY 2001)

Milestone: FAA will begin certifying screening companies using the rule. (FY 2002)

Milestone: FAA will continue purchase and deployment of explosives detection systems, explosives trace detection devices, and other advanced security technologies. (Ongoing; number to be purchased and installed vary by year.)

Milestone: FAA will publish a Final Rule requiring automated passenger screening using the Computer-Assisted Passenger Prescreening System (CAPPS) with bag match or, where available, explosives detection system (EDS) screening of selected passengers' bags. (FY 2001).

Milestone: FAA will assess facility security at all FAA Level 1-4 facilities and achieve physical security accreditation for at least 23 facilities. (FY 2002)

Surface Transportation

DOT has acknowledged the challenge the changing threat of terrorist and other criminal activities and is currently developing a surface transportation security strategy, as recommended by both the National Research Council and the DOT OIG. This document will define the surface transportation security problem and the Department's security objectives as well as identify DOT's role in such efforts as security R&D. To address these concerns, DOT will achieve the following milestone in support of outcome 1.

Milestone: The strategy will be completed by September 2000.

The transportation industry is reluctant to share proprietary and sensitive security information with the Department as it is subject to public disclosure under the Freedom of Information Act (FOIA). Conversely, assigning a security classification to information, such as risk or vulnerability assessments, by DOT as a protective measure prevents the sharing of results with industry officials, most of whom do not hold clearances. In addition, DOT lacks statutory and regulatory authority to require data collection, or to mandate security standards for the surface transportation system. Understanding these limitations, DOT must work to establish an industry Sector Coordinator who will facilitate cooperative industry-DOT partnerships to resolve information sharing issues, and to consider a set of security standards, best practices, and guidelines. Discussions with industry partners as to who will take on the role of Sector Coordinator are ongoing. DOT hopes to have a commitment by September 2000. Once these partnerships are established, performance issues in security can be more effectively addressed.

Milestone: Commitment on Sector Coordinator(s) September 2000.

10.3.2 Computer Security

DOT has acknowledged the computer security challenge. In response to Presidential Decision Directive 63 (PDD-63), which requires the federal government to achieve and maintain the ability to protect our nation's critical infrastructure by 2003, DOT has identified its critical IT assets as residing within the FAA and US Coast Guard.[23] Critical IT assets have been identified and plans are under development to evaluate, remediate, test and certify these systems in accordance with existing federal IT security policy and guidance.[24] Risk assessments are an important step in this process and will be conducted for all PDD-63 systems. These and other steps will ensure that DOT systems are adequately protected by the deadline of May 2003. While FAA and USCG are the only DOT operating administrations (OA's) that have IT assets that meet the criteria of PDD-63, other OA's are developing plans to assess their assets as required by OMB Circular A-130. DOT has established an IT Security Policy that requires all DOT IT systems be assessed to identify vulnerabilities, evaluate and mitigate these where justified, and then test and certify

[23] No other DOT systems meet the criteria of PDD-63.

[24] Computer Security Act of 1987, OMB Circular A-130, PDD-63, NIST guidance, etc.

that adequate protection has been implemented.[25] To address these security concerns, DOT will achieve the following milestones in support of outcome 1:

Milestone: Distribute an approved FAA Order and an FAA Information Security Concept of Operations, finalize a long term plan for deployment of Computer Security Incident Response Capability (CSIRC), and ensure that 100 percent of FAA employees receive general security awareness training and 60 percent of systems administrators receive specialized security training. (FY 2000)
Milestone: FAA will enhance CSIRC and achieve a 20 percent increase in systems completing vulnerability assessments and a 10 percent increase in systems obtaining security certification and authorization. (FY 2001)
Milestone: The DOT Critical Infrastructure Protection Plan (CIPP) sets out a remediation schedule for critical IT assets including risk assessment and development of security and contingency plans, a security training program, and a recruitment/retention/education/evaluation plan. Consistent with the DOT CIPP, USCG has developed its Critical Infrastructure Remediation Plan (CIRP) for its critical IT assets that include one facility, the Operations Systems Center (OSC), and five systems.
Milestone: The OSC risk assessment was completed September 1999. Risk assessments for several of the critical systems have been completed. All risk assessments will be completed by November 2000.
Milestone: The Security Plan for OSC was completed in March 2000. The Security Plans for all critical systems will be completed by April 2001.
Milestone: OSC Contingency Plan is on schedule for completion by June 2001. Contingency Plans for all critical systems will be completed by April 2001.
Milestone: Security Training Programs for OSC and all critical systems are already in place.

10.3.3 Coast Guard Deepwater Capability Replacement Project

The $9.8 to $15 billion, 20-year Deepwater Project is the largest capital improvement project ever undertaken by the USCG. The OIG has acknowledged that the USCG is using an innovative planning process and that when completed it should provide a good basis for establishing needs and developing an acquisition strategy. However, the OIG has stated that there are several critical challenges remaining to ensure that the Deepwater Project is justified and affordable. The USCG needs to fill gaps in the planning process and respond to concerns about how it can proceed with a request to start buying assets in advance of completing its comprehensive planning process. Also, USCG still needs to develop reliable cost estimates, avoid problems other agencies have encountered in major-system replacements, and be realistic about competing budget demands from other DOT agencies.

The USCG has acknowledged this management challenge. In its report of January 2000, the Interagency Task Force on Roles and Missions validated USCG missions, and confirmed ongoing or increasing demand for future USCG services. The USCG has undertaken the recapitalization of its assets in the deepwater operating environment. The Deepwater Capability Replacement Project will see the performance-based acquisition of assets to perform USCG deepwater missions

[25] See Organizational Excellence Section 11.3.1.

worldwide. Working with industry teams, the USCG will acquire an integrated system of surface, air, command and control, intelligence and logistics systems. The conceptual design phase of the project was completed in December 1999. Additional milestones are presented below in support of outcomes 1-6.

Milestone: Complete functional design of project (April 2001)
Milestone: Update Legacy Asset Baseline[26] (June 2000)
Milestone: Begin preparing the Request for Proposal for build-out of the system (November 2000).
Milestone: Complete functional design implementation plan (April 2001)
Milestone: Issue Request for Proposal (May 2001)
Milestone: Receive proposals from industry teams (July 2001)
Milestone: Announce contract award (January 2002)

10.4 Completed Program Evaluations

DOT has evaluated a key program to determine the best allocation of resources to Coast Guard shore stations. The results of this evaluation are presented below.

10.4.1 Shore-Based Response Boat Force Mix Study (USCG 1999): This evaluation assessed whether USCG small boats are allocated to shore stations in the most effective and efficient manner. Findings indicate that the majority of Coast Guard shore stations have a shortage, and a few stations have excess small boat capability which can be reallocated to stations facing shortages. Based on the results, the Coast Guard will ensure the most effective allocation of capability to provide better overall value to the public from available resources in support of strategy 10.2.1.c and outcomes 3, 4, and 5.

10.5 External Factors

DOT used four scenarios[27] in the planning process to illustrate how external factors might impact transportation security in the next 30 years. Globalization, demographics, the U.S. economy and the role of government were the major dimensions of the scenarios. We learned that these and several other external factors such as regional instability, cargo and human smuggling, web-enabled communication and international cooperation may play a part in DOT's ability to achieve our national security outcomes. Within the U.S., the private sector and state and local agencies own and operate much of the Nation's transportation infrastructure and their cooperation is vital in ensuring the security of the transportation system. Unable to predict how these externalities may interact with one another or how they may effect our ability to achieve our national security outcomes, we have outlined both the positive and negative impacts of these factors.

10.5.1 Economic Factors

A strong national economy, corporate mergers and consolidations, and increased global competition could impact the readiness and capability of the transportation infrastructure to meet national security objectives. (Impacts outcomes 2, 6 and 7)

[26] The Legacy Asset Baseline documents maintenance events and backlogs planned.
[27] DOT's global transportation scenarios are at www.dot.gov/stratplan

Growth in volumes of people and goods moving across borders will make it increasingly difficult to detect and separate illegitimate from legitimate activities. (Impacts outcomes 1 and 4)

Large increases in the cost of fuel could stress portions of the transportation system and potentially make lower cost, more frequently used modes more likely targets for criminal and terrorist activity. (Impacts outcomes 1 and 7)

Socioeconomic and political conditions, both here and abroad will influence the criminal actions of those who profit from moving illegal drugs and other contraband into and within the United States. (Impacts outcome 3)

Tight labor markets in a strong national economy and could make recruiting and retention of personnel in critical security disciplines difficult. (Impacts outcomes 1-6)

10.5.2 Technological Factors

Combating the increasing sophistication of devices and techniques that terrorists and criminals may use to threaten or impinge upon the security of the U.S. transportation system and its lines of communication will require advances in technology and human vigilance. (Impacts outcome 1)

More drugs, contraband and even people will be smuggled via commercial cargo containers. Technologies capable of tagging and tracking will be needed to facilitate real-time surveillance and scanning of carriers and cargoes to improve contraband detection. (Impacts outcomes 3, 4, 5 and 6)

Detection technology devebped for and used by aviation may not lend itself well to other transportation systems. Systems that are used for commuter transport have higher volumes of passengers using the systems during more compressed timeframes. Therefore, these systems may require technology with high specificity and lower alarm rates to maintain passenger throughput. (Impacts outcomes 1 and 3)

10.5.3 Political Factors

Nation states will provide the basic geopolitical framework, but boundaries will continue to blur with the emergence of novel economic and security relationships. Greater numbers of powerful non-state entities with diverse interests and communications via the Internet will influence the global community. (Impacts outcomes 1-6)

Improved intelligence and surveillance capabilities will yield increased, and more timely threat information. Private transportation providers and public authorities will need to maintain the flexibility and willingness to adjust security and transport procedures based on threat information. (Impacts outcomes 1, 2, 5 and 6)

The sharing of proprietary and sensitive security information between public authorities and industry officials will be increasingly important to meeting future transportation security challenges. DOT and industry will have to explore new, non-traditional approaches for sharing sensitive information, overcoming disclosure concerns presented by the Freedom of Information Act, and national security clearance limitations. (Impacts outcome 1)

The ability to improve transportation security internationally will be dependent on the extent to which other countries collaborate with or impede U.S. assessments of their seaport and airport security. (Impacts outcomes 1, 5 and 6)

Regional instabilities could lead to attacks on U.S. interests including transportation. (Impacts outcomes 1, 5 and 6)

Increased involvement of organized, professional smugglers represents a significant change in the illegal migrant threat. With more resources at their disposal than individual migrants, smugglers will employ more sophisticated techniques and the latest technology to avoid detection and thwart law enforcement efforts. (Impacts outcome 4)

10.5.4 Environmental Factors

Increasing demand for food, especially protein, and water along with public sensitivity to environmental issues will prompt protective actions to prevent over exploitation of the sea's and fresh water resources. High-sea's migratory species will require cooperative international and regional protection. (Impacts outcomes 5, 6 and 7)

Increased need for energy may stimulate oil and gas drilling in areas beyond the U.S. continental shelf more than 350 miles offshore and in depths greater than 2,000 feet. (Impacts outcome 7)

10.5.5 Social Factors

Public expectation for increased reliability and throughput and reduced transportation times will need to be balanced with requirements for passenger and transportation system security. (Impacts outcomes 1 and 3)

Public tolerance of security measures in aviation is relatively higher due to the perceived threat to this mode, a history of attacks, and the infrequency of airline travel by most Americans as compared with other modes. Should threats to other modes of transportation increase, DOT will have the challenge of addressing a low public tolerance of additional security measures on a frequent, even daily, commuter basis. (Impacts outcome 1)

10.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each national security outcome in this Strategic Plan for 2000-2005 will be supported by one or more national security performance measures fully developed in DOT's Annual Performance Plans for the fiscal years 2002-2005. For example, our results in achieving the outcome *Reduce the vulnerability of the transportation system and its users to crime and terrorism* will be gauged, in part, by progress or milestones in improving the detection rate for simulated explosives that may be brought aboard aircraft. In the national security strategic goal there are three outcomes that were not in DOT's 1997-2002 Strategic Plan. We have discussed this issue at some length during the planning process and understand that we need to develop performance measures for these new outcomes.

DOT's Annual Performance Reports will provide targets, narrative and quantitative information on the extent to which we have achieved each of our national security outcomes. Table 10.6 illustrates the relationships between the outcomes in the Strategic Plan and the measures in the Performance Plan. The measures presented in Table 10.6 are candidates for the Performance Plan and are not final selections.

Table 10.6 National Security Strategic Goal, Outcomes and Performance Plan Candidate Measures

"Ensure the security of the transportation system for the movement of people and goods, and support the National Security Strategy"

Outcomes	Performance Plan Candidate Measures
Reduce the vulnerability of the transportation system and its users to crime and terrorism	Vulnerability to Crime and Terrorism Detection rate for explosives and weapons that may be brought aboard aircraft
Increase the capability of the transportation system to meet national defense needs	Of those who need to act, percent that receive threat information within 24 hours
Reduce the flow of illegal drugs entering the U.S.	National Defense Percentage of days that the designated number of critical defense assets maintain combat readiness rating of 2
Reduce the flow of migrants illegally entering the U.S.	Ship capacity available to meet DOD's requirements for intermodal sealift capacity
Reduce illegal incursions into our sovereign territory	Of the mariners needed to crew combined sealift and commercial fleets during national emergencies, the percent of the total that are available
Increase support for United States interests in promoting regional stability	Drugs Seizure rate for cocaine that is shipped through transit zone
Reduce transportation-related dependence on foreign fuel supplies in support of the National Security Strategy	Migrants Success rate for undocumented migrants attempting to enter the U.S. over maritime routes
	Incursions To Be Determined Coast Guard
	Regional Stability To Be Determined Office of Intelligence and Security
	Dependence on foreign fuel Transportation energy consumption (in quadrillion BTUs) per trillion dollars of real GDP

10.7 Data Capacity

The candidate performance measures in Table 10.6 above include measures utilized in DOT's 2001 Performance Plan and new candidate measures. DOT has developed data for each measure and has published source and accuracy statements for each of the data systems used for constructing these measures.[28] We have described the scope of each measure, the limitations of the data and the statistical issues regarding uncertainty in the measurement.[29] Led by the Bureau of Transportation Statistics (BTS), DOT's Operating Administrations are implementing a plan for verification and validation of all departmental data used in implementing GPRA and for other analytical purposes.[30] DOT is committed to continuous improvement in the

[28] See www.bts.gov
[29] See Appendix I DOT 2001 Performance Plan
[30] See page 161 DOT 2001 Performance Plan

accuracy, reliability and timeliness of transportation security data and is addressing the data needs described below.

Data Needs for National Security
Existing information sources provide indicators for many of the performance measures associated with the National Security Goal. However, in some cases, the data necessary for the Department to measure its attainment of some outcome goals and strategies is lacking, or, in certain instances, no data currently exists. DOT will strive, during the course of this Strategic Plan, to address the following deficiencies in measurement data. Resources permitting, we will: 1) develop better and more complete exposure data for drug and alien interdiction programs; 2) develop data sources addressing national security concerns associated with the transportation system's dependence on and disruptions to foreign fuel supplies; and 3) improve data on the vulnerability of the transportation system to intentional acts of disruption or destruction.

The Department holds no reliable data on the vulnerability of the nation's transportation system for a variety of reasons. For the most part, the Department lacks statutory and regulatory authority to require data collection, or to mandate security standards for the surface transportation system. The Freedom of Information Act (FOIA) effectively prevents the Department from protecting sensitive industry security data even if industry shared that data. Understanding these limitations, DOT must first establish an industry Sector Coordinator. DOT may then establish an industry-DOT partnership to resolve the many information sharing issues, and to consider development of a set of security standards, best practices, and guidelines that may then form the basis for performance measurement.

10.8 Cross-Cutting Programs

DOT has significant alliances and high-level collaboration with several other federal agencies in the security area. DOT staff communicates and meets with other agencies to align policies, process, field work and procedures that advance these initiatives. Below we present partnerships that are most directly aligned with and supportive of our national security strategic goal and outcomes.

10.8.1 Aviation Security
Goal: Prevent explosives, weapons and other dangerous items from being placed aboard aircraft. (Supports outcome 1)
Agencies Involved: DOT/FAA lead, Federal Bureau of Investigation, Bureau of Alcohol, Tobacco and Firearms, U.S. Customs Service, U.S. Postal Service, airport authorities and U.S. and foreign carriers.

10.8.2 Seaport Security
Goal: Assess and monitor port and waterway vulnerabilities, and respond to threats to seaport security. (Supports outcomes 1, 2 and 3)
Agencies Involved: DOT/USCG lead, MARAD, U.S. Customs Service, Department of the Navy, state and local port authorities.

10.8.3 Drug Interdiction
Goal: Reduce the flow of illegal drugs entering the United States. (Supports outcome 3)

Agencies Involved: DOT/USCG lead, FMSCA, FAA, Office of National Drug Control Policy, Drug Enforcement Agency, Department of Defense, U.S. Customs Service, Department of State, Federal Bureau of Investigation.

10.8.4 Migrant Interdiction
Goal: Reduce flow of illegal migrants entering the United States. (Supports outcome 4)
Agencies Involved: DOT/USCG lead, FMCSA, Immigration and Naturalization Service, Departments of State and Defense, U.S. Customs Service, U.S. Border Patrol, foreign governments, state and local enforcement authorities.

10.8.5 Marine Resource Protection
Goal: Protect living marine resources within the U.S. EEZ and in international waters in support of public law and international agreements and conventions. (Supports outcome 5)
Agencies Involved: DOT/USCG lead, National Marine Fisheries Service, Regional Fishery Management Councils, international governing bodies, foreign governments, state and local authorities.

10.8.6 Defense Sealift Capacity
Goal: Maintain sufficient capacity and crews to meet DOD surge and sustainment requirements during a national emergency. (Supports outcome 2)
Agencies Involved: DOT/MARAD lead, Department of Defense, U.S. maritime industry.

10.8.7 Port Readiness
Goal: Timely availability of DOD-designated commercial port facilities for the embarkation of military equipment and supplies during mobilizations. (Supports outcome 2)
Agencies Involved: DOT/MARAD lead, USCG, Department of Defense, U.S. port industry.

10.8.8 Chemical and Biological Weapons Detection
Goal: Evaluate chemical and biological detection systems for use in the special environments of transit passenger terminals. (Supports outcome 1)
Agencies Involved: DOT/FTA lead, Department of Energy, Washington, D.C. Metropolitan Area Transit Authority (WMATA).

10.8.9 Intelligence
Goal: Obtain, analyze, and disseminate information on threats to the nation and our critical infrastructure. (Supports outcome 1)
Agencies Involved: DOT/USCG lead, FAA, Central Intelligence Agency, National Security Agency, National Intelligence Council, Defense Intelligence Agency, Federal Bureau of Investigation, state and local law enforcement.

10.8.10 National Defense
Goal: Ensure interoperability of systems and maintain a state of readiness (e.g., sufficient capacity and personnel) to defend the nation in time of war. (Supports outcome 2)
Agencies Involved: DOT/USCG lead, MARAD, Department of Defense, National Guard.

10.8.11 Critical Infrastructure Protection

Goal: Achieve and maintain the ability to protect our nation's critical transportation infrastructure by 2003, per Presidential Decision Directive (PPD) 63. (Supports outcome 1)

Agencies Involved: DOT/Office of Intelligence and Security lead, all DOT Operating Administrations, National Security Council, Department of Defense, National Infrastructure Protection Center, Critical Infrastructure Assurance Office, transportation industry, state and local governments.

10.8.12 Regional Stability

Goal: Provide nation-building assistance in support of U.S. foreign policy to help foreign governments improve their critical security and transportation infrastructures. (Supports outcomes 1 and 6)

Agencies Involved: DOT/USCG lead, Departments of Defense, Treasury Justice, Agency for International Development, Security Assistance Program, International Maritime Organization, foreign governments.

11. Organizational Excellence Goal

"Advance the Department's ability to manage for results and innovation"

11.1 Outcomes

1. Improve customer satisfaction
2. Improve employee satisfaction and effectiveness
3. Improve organizational performance and productivity

11.2 Strategies

Under Secretary Slater's leadership, we have adopted a management philosophy that aligns all of the Department of Transportation's units under a common vision and shared sense of purpose. Operating as ONE DOT allows us to work better together as a single integrated team to achieve our strategic goals.

Our organizational excellence goal builds upon the central ONE DOT management strategy we advanced in our 1997-2002 Strategic Plan. ONE DOT has allowed us to create and communicate our goals and key priorities to all employees becoming a truly visionary and vigilant Department of Transportation. The synergistic effects of better teamwork and a better-aligned organization are evident even as we raise the bar of performance.

We met the Y2K challenge, the first global challenge of the information age, by working cooperatively with our public and private sector partners domestically and abroad. U.S. transportation systems functioned normally as the world transitioned into a new century and a new millennium. We have surpassed our one million goal for introducing youth to career opportunities in transportation through our Garrett A. Morgan Technology and Transportation Futures program.

In the management area, 1999 was the first year that DOT's financial statements received an unqualified audit opinion from our Inspector General. This achievement affirms the Clinton-Gore Administration's focus on improving the management of the federal government. Most significantly, we have made progress in meeting the challenges of transportation safety, President Clinton's and Vice President Gore's highest transportation priority: Seat belt and child safety seat use are at all time highs, fatal highway crash rates in general, and alcohol-related fatal crashes in particular, are at all time lows since records began in 1921; and highway-rail crossing incidents have been reduced by double digits for two consecutive years.

With this new strategic plan, we are raising the bar of performance for the Department. Using the SWOT technique,[31] we developed three organizational outcomes we want to achieve in the next five years: improved customer satisfaction; improved employee satisfaction and effectiveness; and improved organizational performance and productivity. Making improvements in these key areas will require a strong, universal commitment to improving customer satisfaction with the operation of the transportation system as well as with the services we provide. Achieving higher levels of customer satisfaction demands attention on how we communicate with our customers and our own workforce, how we implement our programs, and how we recruit, develop and motivate our workforce.

We will employ six strategies to achieve our organizational excellence outcomes[32] and enable us to accomplish our strategic goals, outcomes and strategies. We will 1) exert leadership throughout the transportation enterprise by articulating a vision and setting future direction; 2) provide top-quality customer service; 3) achieve results by empowering our employees to realize their full potential; 4) set the standard for e-government; 5) improve our services and processes through innovation, new technology and proven management techniques; and 6) accelerate the use of new transportation technologies.

Our organizational excellence strategies are targeted to specific outcomes. The resources and programs listed in DOT's Performance Plan and budget are necessary to achieve the organizational excellence outcomes and execute the strategies. Each year, DOT reassesses its performance goals and targets based upon appropriations. The schedule for executing the strategies extends from the present through 2005. Our strategies provide details on how we will continue to benchmark and improve processes and move quickly toward electronic government to improve our efficiency and customer service.

11.2.1 Leadership Strategies: Form a leadership team to articulate a vision and set future, strategic direction for the transportation enterprise based upon customer and stakeholder feedback, evaluation of our programs, and consideration of factors that could affect the achievement of our goals.

a. Communicate a clear and consistent message that we are committed to our customers, our values and our vision, mission and goals. (Supports outcomes 1-3)
b. Work together as a ONE DOT team, bridging across modes, to achieve our strategic goals. (Supports outcomes 1 - 3)
c. Make innovation an integral part of DOT's culture by rewarding and providing incentives for the adoption of new ideas, streamlining processes, and expanding use of technologies that increase the effectiveness and efficiency of our operations. (Supports outcomes 1 - 3)
d. Provide leadership within the federal government for transportation issues and, within DOT, align the priorities and resources of the operating administrations with DOT's strategic goals. (Supports outcomes 1 - 3)

[31] SWOT stands for strengths, weaknesses, opportunities and threats.
[32] DOT's six organizational strategies generally parallel the Baldrige criteria for organizational excellence which can be found at www.baldrige.com/CRITERIA.HTM

11.2.2 Customer Satisfaction Strategies: Develop a Department-wide customer satisfaction system that provides a framework for consistent and compatible data collection using a common set of measures to assess both the transportation system's and DOT's ability to meet customer needs.

a. Conduct effective two-way communication with all customer segments to understand their needs and changing priorities. (Supports outcomes 1 and 3)
b. Use customer information gathered from the National Transportation Omnibus Survey and other feedback methods to identify trends, opportunities and performance gaps to target areas needing improvement. (Supports outcomes 1 and 3)
c. Benchmark with the best in government and business continuously to improve customer service delivery, policy and program decision-making and to guide and influence the development of performance goals for the transportation system and for DOT services. (Supports outcomes 1 and 3)
d. Improve customer service tools, training and systems to assist employees in delivering programs and services that increase the satisfaction of the American public with the transportation system and DOT programs and services. (Supports outcomes 1 - 3)

11.2.3 Human Resources Strategies: Develop an integrated system of human resources programs and activities that makes best use of our human capital to support DOT's goals while empowering individual workers to realize their full potential.

a. Sustain a diverse, highly skilled workforce that will achieve our goals with a strong customer focus and a commitment to excellence.
b. Expand workforce planning, including succession planning, for retirements in the next 10 years to ensure that DOT's staff has the skills and transportation competencies to accomplish our goals.
c. Strive to meet the needs, expectations, and preferences of our employees by:
    - Measuring employee satisfaction regularly;
    - Benchmarking techniques that identify areas and standards for improvements and taking actions to make improvements; and
    - Expanding investments in worklife improvements such as transit benefits, rotational assignments and telecommuting. (Supports outcome 1)
d. Eliminate artificial barriers to the advancement and full contribution of all DOT employees. (Supports outcome 2)
e. Link employee performance and incentive awards to the achievement of the DOT's strategic and performance goals. (Supports outcomes 1 - 3)
f. Support continuous learning for all DOT employees through distance learning and traditional institutions to develop and update the competencies they need to accomplish the Department's strategic and performance goals. (Supports outcomes 2 and 3)
g. Strengthen Labor-Management partnerships throughout the Department and create a positive labor-management climate by supporting the DOT Labor Management Partnership Strategic Plan. (Supports outcome 2)

11.2.4 Information and Technology Management Strategies:

a. Harmonize new and existing data and systems to ensure compatibility, security, and reliability. (Supports outcomes 1 - 3)
b. Serve the public's information and service needs around the clock by making e-government a reality. (Supports outcomes 1 - 3)
c. Make doing business electronically the standard means of performing internal DOT services and processes. (Supports outcomes 1 - 3)

11.2.5 Strategies for Resources, Business Systems and Processes: Systematically apply proven management techniques, innovative approaches, and current technology to our processes.

a. Link DOT's budget process to results by using performance information to make system-based resource decisions. (Supports outcome 3)
b. Make sound capital investment decisions that contribute to the achievement of DOT's mission and strategic goals and that are integrated with the planning, budget, acquisition and program management processes. (Supports outcome 3)
c. Meet the highest federal standards for DOT facilities in terms of accessibility, safety and security. (Supports outcomes 2 and 3)
d. Produce fair and accurate financial statements to: establish accountability for DOT assets; improve financial credibility for DOT budget requests; support sound management decisions including cost-benefit analysis and program evaluation; and establish a basis for user fees. (Supports outcome 3)
e. Increase the timeliness, transparency and fairness of DOT's legal and regulatory processes through more innovative and collaborative approaches. (Supports outcome 1)
f. Provide best value products and services that advance DOT's strategic goals through world-class acquisition and grants business processes. (Supports outcome 3)

11.2.6 Strategies for Innovation, Research and Development: Accelerate the use of new technologies and foster long-term and high-payoff enabling research.

a. Provide leadership within the federal government for transportation R&D, and within DOT, align R&D sponsored by the operating administrations with DOT's strategic goals. (Supports outcome 3)
b. Ensure a balanced R&D portfolio that addresses the critical, long-term transportation needs of DOT and the nation through an annual National Research Council peer review of DOT's R&D proposals. (Supports outcome 3)
c. Leverage long-term research within the Department and across the federal government by bringing together communities of common interest, including DOT's University Transportation Centers, identifying areas for collaboration, and implementing a long-term transportation research and education program for the nation. (Supports outcomes 1 - 3)
d. Eliminate regulatory and legal barriers that slow the innovation process and the deployment of new technology. (Supports outcome 3)
e. Develop and extend public-private partnerships to enable greater information diffusion, quicker product development and faster rates of learning. (Supports outcome 3)

11.3 Management Challenges

The strategies articulated in the preceding section represent our approach to future performance challenges. Additionally, the GAO and the DOT OIG have identified organizational areas needing management attention. These areas are computer security, financial accounting, FAA financing, and implementation of the Government Performance and Results Act (GPRA).

11.3.1 Computer Security

The OIG has noted that a 1997 study by the President's Commission on Critical Infrastructure Protection resulted in the issuance of Presidential Decision Directive 63 (PDD-63) requiring that the Nation's critical infrastructure, both physical and cyber-based, be protected from intentional destructive acts. The OIG observed that PDD-63 specified two deadlines – having an initial operating capability to protect critical infrastructure by May 2000 and a full operating capability by May 2003. While 110 of DOT's systems have been classified as infrastructure-critical,[33] the costs associated with fixing vulnerabilities associated with these systems, could be significant. Fixing computer vulnerabilities may require system reprogramming or facility upgrades. Considering the funding constraints, DOT needs to focus on risk/vulnerability assessments, and use these assessments as a basis to prioritize the work.[34] The National Security strategic goal, Section 10.3.2, addresses related computer security management challenges.

DOT has acknowledged that risk assessments are an important step and will be conducted for all PDD-63 systems. The DOT agenda includes the following milestones in support of outcome 3 to ensure that DOT systems are adequately protected by the deadline of May 2003.

> *Milestone: 100 percent of risk assessments will be completed by November 2002.*
> *Milestone: 100 percent of remediation and testing will be completed by May 2003*

While FAA and USCG are the only DOT operating administrations (OAs) that have IT assets that meet the criteria of PDD-63,[35] other OAs are developing plans to assess their assets as required by OMB Circular A-130. DOT has established an IT Security Policy that requires all DOT IT systems to identify vulnerabilities, evaluate and mitigate these where justified, and then test and certify that adequate protection has been implemented. Therefore, the DOT agenda includes the following milestones in support of outcome 3.

> *Milestone: By September 30, 2000, DOT Office of the CIO will develop an overall IT Security Program Plan for DOT.*
> *Milestone: By September 30, 2000, DOT will provide IT Security Awareness Training to 100 percent of our workforce*
> *Milestone: By March 30, 2001, DOT OAs will develop an overall strategy/plan for ensuring their IT assets are in compliance with OMB Circular A-130.*
> *Milestone: By September 30, 2001, DOT will assess, test, and certify no less that 25 percent of our IT assets.*

[33] DOT has 609 mission-critical systems used to support core business functions. However, only 110 systems have been identified as infrastucture-critical because they are "…essential to the Nation's defense, economic security, or public confidence…"
[34] See National Security Management Challenges (Section 10.3)
[35] See section 10.3.2

11.3.2 Financial Accounting

In December 1999, the OIG placed financial accounting/Chief Financial Officer Act as one of its Top 12 management issues because DOT had been unable to get an unqualified (clean) audit opinion on its financial statements. Since then, OIG completed its audit of the DOT FY 1999 Financial Statements and rendered a clean opinion.

DOT has acknowledged that the remaining issue is for DOT to replace its Departmental accounting system with a state-of-the-art financial management and accounting system. Therefore, the DOT agenda includes the following milestones.

> *Milestone: DOT plans to fully implement such an accounting system supported by procedures and controls by June 30, 2001.*
> *Milestone: FAA will implement the DELPHI financial system by 2001.*
> *Milestone: FAA will integrate the Cost Accounting System (CAS) DEPPHI, and future Property system(s) as part of a wide scale financial system. FAA will link CAS information and the Financial Statement of Net Cost to FAA performance measures in conjunction with the DOT Strategic Plan by FY 2002.*

11.3.3 FAA Financing

A three-year FAA Reauthorization Bill was signed in early 2000. It provides higher levels of funding for FAA's capital programs for three years. Additional management controls will be put in place to make FAA management of air traffic services more businesslike. Prior to the passage of the bill, the OIG observed that FAA must spend and manage whatever resources it receives more efficiently than it has in the past. FAA must develop fiscal and management tools to operate like a business. Issues to be addressed include managing the rising costs of operations, establishing a labor distribution system to capture costs for air traffic controller and airway facilities maintenance labor, and producing accurate financial information and data.

The FAA has acknowledged that it must develop the fiscal and management tools it needs and has included the following milestones to address these issues in support of outcome 3.

> *Milestone: Sustain the clean audit opinion received from the OIG in 1999. This will include implementing a DOT-wide accounting system in 2001 and the implementation of a new system closely integrated with the accounting system to substantiate the value of property, plant, and equipment. These steps will help FAA establish accountability for its assets, improve financial credibility for its budget requests, collect accurate data to support sound management decisions, and establish a basis for user fees. (FY 2000-2005)*
> *Milestone: Develop a multi-year business plan to link FAA programs to performance metrics and to resource requirements. This will compare forecasted business expectations of FAA users with realistic assessments of available FAA budget resources. Realistic tradeoffs can be considered and plans developed. (FY 2000)*

Milestone: Complete implementation of a baseline Cost Accounting System in 2002, including appropriate labor distribution. Cost accounting data for FAA services such as En-Route or Oceanic services can be linked with performance data to benchmark service delivery points, and begin analysis of differences between facilities. This will help FAA manage resources and allocate costs among programs. (FY 2002)
Milestone: Institute a monthly Performance Report as a vehicle for FAA top management review of financial and performance data. This will help FAA monitor budget and program execution with an eye to cost containment and improved short-term performance. The first report will be issued in June 2000 and will grow in scope and quality as the reporting and analytical processes mature. (FY 2000-2001)

11.3.4 Government Performance and Results Act (GPRA) Implementation

The OIG has noted that GPRA requires federal agencies to develop five-year strategic plans, annual performance plans and annual performance reports. He further noted that DOT's first strategic and performance plans were rated by Congress as the best in the Federal Government. To continue this success, DOT needs to improve the reliability and timeliness of its performance data.

DOT has acknowledged that increasing the validity, reliability, timeliness and comparability-over-time of performance data will be a challenging task. Armed with three years experience implementing GPRA, DOT's strategic planning team understood the criticality of the relationship between our Strategic Plan and our Performance Plans and Reports. The team discussed at some length the interrelationship among outcomes, performance measures and data capacity. We concluded that we wanted outcomes and performance measures that were most relevant to our customers regardless of the difficulties we might encounter in measurement. As a consequence, DOT has included a data improvement strategy under each strategic goal. Moreover, this strategic plan includes several refinements of the outcomes we used in our 1997-2002 Plan and new outcomes that we believe will better show our progress in achieving our strategic goals. For the first time, we have adopted outcomes for our organizational excellence goal. These refinements will affect the measures that are used in DOT's Annual Performance Plans. To improve DOT's data capacity, the BTS is leading the development of standards for DOT's data, training people in the collection and interpretation of transportation data, and coordinating data series among operating administrations.

In summary, we accept the considerable challenge we have in increasing the validity, reliability, timeliness and comparability over time of the performance data we will use to support GPRA. Our data improvement strategies throughout the plan reflect a commitment to a continuing effort in DOT, as each performance plan has advanced the understanding and presentation of performance data. The Office of the Secretary will lead the development and refinement of performance measures, and BTS will lead the effort to improve the data and its presentation. Therefore, the DOT agenda includes the following milestones in support of outcomes 1-3.

Milestone: By December 31, 2000, draft data quality standards will be completed and available for review on the BTS web site.

Milestone: By March 31, 2001, we will have past-year data for every measure in the performance report, we will have confidence intervals associated with each measure, and we will have developed statistical tools to help evaluate and formulate DOT's performance goals.
Milestone: By December 31, 2001, leading indicators will be available for DOT strategic goals and most DOT performance measures, to help anticipate trends in each of these outcomes.
Milestone: By March 31, 2002, we will complete an assessment of data quality for the major data collection systems in DOT, and we will document the major sources of error in all of DOT's performance measures.
Milestone: By December 31, 2003, consensus data standards will be in use throughout DOT.

11.4 Completed Program Evaluations

The evaluations presented below addresses key management areas within the Department: use of IT to improve customer satisfaction and reduce paperwork; the FAA Accountability Board; and assessments of FAA acquisition reform.

11.4.1 FAA's Airmen Certification and/or Rating Application (ACRA) System: To assess the validity of the use of IT to reduce the information collection burdens imposed on the public, a process program evaluation was conducted on the FAA's ACRA system. The ACRA system is used to certify that airmen meet required training and flight time criteria. The evaluation compared the manual and automated processes by measuring the results achieved with respect to reducing paperwork burden, enhancing customer satisfaction, and improving efficiency and productivity. The results demonstrated that the application of IT could be useful in reducing the paperwork burden on the public, enhancing customer satisfaction, and improving efficiency and productivity. In addition, the results of this evaluation suggest that the application of IT on other information collections could have similar improvements. We considered the results of this evaluation in developing our information and technology strategies in section 11.2.4 in support of outcomes 1, 2 and 3.

11.4.2 Accountability Board: A team of 12 FAA employees conducted an independent evaluation of the first year of the FAA Accountability Board. The Board provides a quick and informal process of oversight to FAA managers to ensure that allegations of sexual harassment or misconduct are dealt with timely, consistently, and fairly. The longitudinal evaluation, completed in October 1999, compared the results of the 1997 Employee Attitude Survey to the evaluation team's survey of more than 1,800 FAA employees. The team found a 50 percent reduction in the number of supervisory and non-supervisory employees reporting that sexual harassment is a problem in the FAA workplace. Based in part on those results, the Board's scope is being expanded beyond sexual harassment and misconduct of a sexual nature to include other areas of harassment or discriminatory behavior. The results of this evaluation were considered in development of strategies 11.2.3.a, c, and d in support of outcome 2.

11.4.3 Booz-Allen & Hamilton Independent Assessment of Acquisition Reform: Booz-Allen & Hamilton, in a study mandated by Congress, found that FAA has made significant progress since adopting the Acquisition Management System (AMS) on

April 1, 1996. Specific achievements include overall improvement in the acquisition management process, reducing time to contract awards by more than 50 percent, an increase in competitive awards, more awards based on best value, and greater emphasis on the use of COTS/NDI solutions. Booz-Allen & Hamilton also recommended continued management attention and focus by ensuring that the AMS and other reform initiatives are compatible, by clarifying organizational roles and responsibilities and encouraging staff development and training. This evaluation supports strategy 11.2.5. f and outcome 3.

11.4.4 Internal Evaluations of FAA Acquisition Reform – The First, Second, and Third Years: (April 1996-March 1999) The FAA has conducted internal evaluations each of the first 3 years of Acquisition Reform. The first year report found measurable progress in implementing the Acquisition Management System, reduced procurement times, cost savings to industry, and an increase in obligations to small business. It also found a decrease in obligations to socially and economically disadvantaged businesses, problems with the new dispute resolution process, a lack of consistent measurement capability, and minimal progress in establishing a full life-cycle cost perspective.

The second annual evaluation set objectives and evaluated the six program areas of Mission Analysis, Investment Analysis, Baseline Management, the Joint Resources Council, the Integrated Product Development System, and Procurement. The evaluation concluded that the Acquisition Management System (AMS) "…has been in place for two years, and the FAA has made significant progress toward implementing procedures designed to achieve cost and schedule goals. After the second year, the AMS process was moving in the right direction but it was still too early to validate the success of acquisition reform." The evaluation made 14 recommendations ranging for the need for better identifying and prioritizing Mission Need Statements to better organization of responsibilities, better development of baseline data, and better planning for future funding needs.

For the third evaluation, the FAA Acquisition Executive tasked the Program Evaluation Branch to review how the agency is doing since acquisition reform. Overall, the evaluation found that procurement efforts were achieving faster awards, competition, and were meeting small business goals. However, FAA was failing to meet its goals for awarding contracts to small businesses owned by socially and economically disadvantaged individuals. The evaluation found that the agency's program results were on track to achieve success in terms of ensuring programs support the FAA mission, deliver planned product performance results, and meet customer needs, but were not on track to meet cost and schedule baselines approved for individual programs. This evaluation supports strategy 11.2.5. f and outcome 3.

11.5 External Factors

DOT used four scenarios in the planning process to illustrate how external factors might impact transportation and the Department in the next 30 years. Globalization, demographics, the U.S. Economy and the role of government were the major dimensions of the scenarios. We learned that these and several other factors such as bidding for talent in a boom economy, potential devolution of government services and accompanying decreases in DOT's budget, and major institutional changes

resulting from e-government may play a part in our ability to achieve our organizational excellence goals.

11.5.1 Political Factors

Adequate funding is one of the key factors in DOT's ability to improve the performance of the agency. While funding is no substitute for creative and effective leadership, adequate funding is needed to move the organization to a higher level of performance. For example, in the next few years, DOT will need to make a significant commitment to professional development, to improve its information infrastructure, update the skills of its workforce, attract the next generation of transportation talent, purchase ergonomic workstations, and expand our DOT leadership efforts. Should devolution of the Highway Trust Fund to the states occur, there would be considerably less funding for DOT's services. (Impacts outcomes 1 - 3)

11.5.2 Economic Factors

It will be difficult for DOT to attract and retain the talent needed to staff the organization if the U.S. economy continues to grow at record levels. In a full employment economy, there are a number of challenging jobs available and better salaries than the Government can offer. It will be incumbent on DOT to redesign its jobs to make them more rewarding and interesting, to use computers rather than people to perform routine tasks, to reinvent unrewarding processes, and to ensure that the bureaucracy does not stifle the creativity of employees especially new workforce entrants. (Impacts outcomes 1 - 3)

11.5.3 Information Technology Factors

Information-related technologies enable the collection, management, integration and distribution of more transportation information in less time with better fidelity and for broader applications. Because of this, the transportation system will become more dependent on information and information technology, which will make it more susceptible to accidental or deliberate tampering. There will be an increased need for new security measures. Thus, DOT will be called upon to set standards both in the U.S. and internationally, for information system interfaces and electronic safety, security and communications systems. (Impacts outcomes 1 and 3)

1.6 Relationship Between Strategic Plan Outcomes and Performance Plan Candidate Measures

Each organizational excellence outcome in this Strategic Plan for 2000-2005 will be supported by one or more performance measures fully developed in DOT's Annual Performance Plans for the fiscal years 2002-2005. There are three new outcomes in this section of the plan. At this writing, we have begun to take steps to develop date for performance measures for each of these outcomes.

DOT's Annual Performance Reports will provide targets, narrative and quantitative information on the extent to which we have achieved each of our organizational excellence outcome goals. Table 11.6 illustrates the relationships between the outcomes in the Strategic Plan and our plans for developing new measures for the 2001-2 Performance Plans.

Table 11.6 Organizational Excellence Goal, Outcomes and Performance Plan Candidate Measures

"Advance the Department's ability to manage for results and innovation"

Outcomes	Performance Plan Candidate Measures
Improve customer satisfaction Improve employee satisfaction and effectiveness Improve organizational performance and productivity	Customer Satisfaction Percent satisfied with transportation system performance Percent satisfied with customer service provided by DOT Employee Satisfaction and effectiveness TBD: DOT plans to develop measures of employee satisfaction using DOT, OPM, NPR and operating administrations' survey instruments Organizational performance and productivity TBD: DOT plans to develop measures based upon administrative records and indices

11.7 Data Capacity

The performance measurement of each of the organizational excellence outcomes requires the development of satisfaction measures and the collection of timely data. The objective is to develop measures that are applicable in both the tracking of overall performance and in informing decision-makers at the program, office, agency and Departmental levels. As a result, data in support of organizational excellence is needed in the areas described below.

Data Needs for Organizational Excellence
Resources permitting, DOT will: 1) develop department level, aggregate measures of customer satisfaction; 2) develop comprehensive and comparable program-level measures of customer satisfaction; 3) develop employee satisfaction, measures that encompass overall satisfaction, effectiveness, and organizational performance; and 4) improve data sources addressing the extent to which threats occur to DOT's electronic security for transportation systems.

11.8 Cross-Cutting Programs

DOT will continue its high-level partnerships to ensure that research on transportation issues is well coordinated and receives priority attention within the federal government.

11.8.1 Innovation, Research, and Development

Goal: Foster long-term and high-payoff transportation research. (Supports outcome 3)
Agencies Involved: DOT/RSPA lead, all DOT operating administrations, Departments of Defense, Energy, and Commerce, National Aeronautics and Space Administration, National Science Foundation, Environmental Protection Agency, National Science and Technology Council, and the National Research Council.

12. Schedule for Future Program Evaluations

The following table lists DOT program evaluations which will be conducted in fiscal years 2000-2005. The tables present the titles or subject matter of the evaluations, the strategic goal or goals they support, the methodology and scope of the studies and the estimated completion dates.

Table 12 Future Program Evaluations

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Essential Air Service (OST/X)		X	X				Combination	Examine characteristics of communities served, type and frequency of service, and economic benefits	2000
International Aviation Liberalization (OST/X)			X				Combination	Evaluate the economic impact of eliminating bilateral restrictions in international aviation markets	2000
Elimination of Sub-Standard Vessels (USCG)	X				X		Combination	Evaluate impact of eliminating non-compliant vessels on major and medium oil spills and marine casualty rates	2000

Legend

S Safety
M Mobility
EG Economic Growth
E Environment
NS National Security
OE Organizational Excellence

Methodology

Longitudinal – Study of data points or data series before and after intervention
Cross Sectional – Study of different groups or sites at the same point in time
Statistical – Regression or other statistical analysis
Combination – Use of two or more complementary analytic techniques
Management Study – Process evaluation using objective measurement and analysis

Cost Benefit – Comparison of a program's outputs or outcomes with the costs to produce them

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Personal Flotation Device (PFD) Wear Rates and Wearability (USCG)	X						Combination	Evaluate the relationship between PFD wear rates and changes in wearability as a result of PFD design improvements	2000
Navigation Aid Mix System Analysis (USCG)	X	X	X				Combination	Evaluate the relative effective-ness of electronic, audio, visual, and other aids to navigation	2000
Security Screening for Baggage and Passengers (FAA)					X		Longitudinal	Evaluate impact of security screening programs on detection of improvised explosive devices and weapons	2000
Acquisition Reform (FAA)						X	Longitudinal	Third year internal evaluation of the implementation of Acquisition Reform	2000
Restriction Reduction Plan-Supports Free Flight (FAA)		X	X				Longitudinal	Evaluate initiatives to reduce restrictions constraining the NAS	2000
Highway Cost Allocation (FHWA)			X				Combination	Evaluate highway user charges based on equity, and economic efficiency principles	Updates
State Initiatives to Reduce Fatal Truck Crashes (FMCSA)	X						Combination	Examine the effectiveness of state truck safety initiatives	2000

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Safe Communities (NHTSA)	X						Longitudinal and statistical	Examine the effectiveness of the Safe Communities program	2000
Maritime Security Program (MSP) and Volunteer Intermodal Sealift (VISA) Agreement (MARAD)					X		Combination	Evaluate the impact of MSP/VISA in achieving national security goal	2000 - 2001
Alternative Dispute Resolution Process Evaluation (Intermodal)						X	Management Study	Assess alternate dispute resolution processes in a variety of contexts—contracting and procurement, civil rights, workplace matters, and civil enforcement	2001
Project Kimball (USCG)						X	Management Study	Evaluate operations, resources, staffing of groups, shore stations, and aids to navigation teams to improve performance	2001
Readiness Tracking System (USCG)						X	Management Study	Evaluate overall operational readiness; recommendations for data system to track readiness	2001
Recruiting Needs (USCG)						X	Management Study	Evaluate structure of recruiting program and plans to fill the workforce	2001
Strategy for Migrant Interdiction Program (USCG)					X		Management Study	Evaluate inter-agency strategy for migrant interdiction	2001

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Cutter Crewing Model Assessment (USCG)						X	Management Study	Evaluate criteria for size and composition of crew aboard USCG Cutters	2001
Acquisition Reform (USCG)						X	Management Study	Evaluate inno-vative practices resulting from Reinvention Lab	2001
Drug Interdiction Deterrence Study (USCG)					X		Combination	Evaluate deterrent value of active presence of USCG inter-diction forces	2001
Safer Skies (FAA)	X						Combination	Evaluate commercial and general aviation loss of control, surviva-bility, or aeronautical decision-making interventions	2001-2003
Environment al Review Process Streamlining (FAA)				X		X	Management Study	Review decision making process for projects having an environmental decision component	2001
Air Taxi Safety Study (FAA)	X						Combination	Review safety programs related to the air taxi segment of the aviation industry	2001
Acquisition Reform (FAA)						X	Management Study	Review procure-ment and acquisition program flexi-bilities — Phase I	2001
Selected Safety Initiative Evaluation (FHWA)	X						Combination	Evaluate highway safety improve-ment programs	2001

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Commercial Motor Vehicle Crash Causation Study (FMCSA)	X						Combination	Determine causal and contributing factors for crashes involving commercial motor vehicles	2001
Switching Operations Facility Analysis (FRA)	X						Combination	Evaluate recommenda-tions to the railroad industry for reducing railroad employee fatalities	2001
Safety Data Analysis (BTS)	X					X	Management Study	Evaluate data needs in comparison to existing data collection and analytical processes	2001
Information Dissemina-tion Process (Office of Intelligence and Security)					X	X		Evaluate current information dissemination requirements pertaining to transportation	2002
Maritime Safety Program Impact (USCG)	X						Combination	Evaluate the impact of safety strategies, on maritime fatalities, injuries and property	2002
Recreational Boating Fatality Data Capture (USCG)	X					X	Management Study	Evaluate data collection and analysis of boating fatalities	2002
Great Lakes Icebreaking (USCG)		X	X				Combination	Evaluate Great Lakes ice-breaking on mobility of goods and customer requirements	2002
Free Flight (FAA)		X	X				Longitudinal	Assess conflict probe-user request evaluation tools	2002

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Runway Incursion Study (FAA)	X					X	Management Study	Evaluate programs put into place to minimize the probability of runway incursions	2002
Acquisition Reform (FAA)						X	Management Study	Review progress in procurement and acquisition program flexibilities—Phase II	2002
CMAQ Program Study (FHWA)		X		X			Cross-sectional	Assess air quality, congestion relief and quality of life benefits of the CMAQ program	2002
Safe Miles and CR Impact Assessment (FMCSA)	X						Combination	Assess roadside inspection program	2002
Job Access and Reverse Commute (FTA)		X	X	X			Combination	Evaluate the Job Access program's impact on the Welfare-to-Work initiative	2002
Buckle Up America, Phase 1 (NHTSA)	X						Longitudinal and Cross-sectional	Evaluate the 1996-2000 joint efforts by NHTSA and its private sector partners to increase use of safety belts and child safety seats	2002
Federally Funded Maritime Education and Training (MARAD)					X		Combination	Update MARAD FY 1999-2000 evaluation of federally funded education on the availability of mariners for defense mobility	2002-2003
Rail Passenger Rider Ship Increase (FRA)		X					Longitudinal	Evaluate service improvements on long-term efforts to assure financial viability of Amtrak	2002

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Ship Scrapping Program (MARAD)				X	X		Combination	Evaluate effectiveness of ship scrapping efforts	2002
Pipeline Risk Manage-ment Demonstration Program (RSPA)	X			X		X	Combination	Evaluate a Congression-ally chartered experiment with regulatory alternatives and program development	2002
Invasive (Aquatic Nuisance) Species Program (USCG)				X			Longitudinal	Evaluate the voluntary ballast water management program	2003
National Estimate of Personal Flotation Devices (PFD) Wear Rate (USCG)	X						Longitudinal	Evaluate enumerating-PFD use over time	2003
Drug Interdiction Deterrence Study (USCG)					X		Combination	Final evaluation: a drug interdiction deterrence model	2003
Operational Errors and Deviation Abatement Study (FAA)	X						Combination	Evaluate agency efforts to minimize operational errors and deviations	2003
Innovative Finance Techniques (FHWA, FTA, FRA)		X	X				Longitudinal and Cross-sectional	Evaluate specific finance techniques 2 to 4 years after implementation	2003 - 2005
Assessment of Design-Build Contracting Procedures (FHWA)		X	X			X	Combination	Evaluate the effectiveness of design-build contracting	2003

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Safety in the highway project development process (FHWA)	X						Cross-sectional	Evaluate how safety issues are integrated into the highway project development process at state and local levels	2003
Rail Passenger Car Safety Standards (FRA)	X				X		Combination	Evaluate safety impacts of passenger Car Safety Standards on preventing occurrences involving railroad passenger equipment	2003
Chemical/ Biological Agent Detection (FTA)	X				X		Combination	Evaluate R&D and use of chemical, biological and explosives detection systems in the transportation system	2003
Commercial Fishing Vessel Safety Program (USCG)	X						Combination	Evaluate the changes in fishing vessel casualty rates and the effectiveness of safety initiatives designed to reduce fishing vessel casualties	2004
Ocean Guardian (Fisheries) (USCG)				X			Combination	Evaluate the impact of the fisheries law enforcement strategic plan OCEAN GUARDIAN	2004
Long Term Capital Leasing (FAA)						X	Cost Benefit	Evaluate of lease vs. own for certain FAA capital equipment	2004

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Engineering Economic Analysis Tool s (FHWA)		X	X				Cross-sectional	Identify tools (including life cycle costs, HERS) and evaluation framework in 2003. Assess tools in 2004	2004
Side Impact Protection (NHTSA)	X						Statistical (Crash Data)	Evaluate fatality- and injury-reducing benefits, and costs of side impact protection implemented in passenger cars since model year 1994	2004
Safety Integration Plan (SIP) Merger Surveillance Tracking (FRA)	X		X				Combination	Evaluate the safety impact of merged railroad corporations' SIP's on railroad safety	2004
Occupational Safety and Health (USCG)	X			X			Combination	Evaluate the most important aspects of the Coast Guard's Occupational Safety and Health Program on workers in marine safety and environmental protection	2005
Ocean Steward (USCG)				X		X	Combination	Evaluate the impact of the protected living marine resource strategic plan OCEAN STEWARD	2005
Commercial Motor Vehicle Crash Causation Study (FMSCA)	X						Combination	Determine causal factors for crashes involving commercial motor vehicles	2005

Table 12 Future Program Evaluations *(continued)*

Program Evaluation	Strategic Goals					OE	Methodology	Scope	FY Complete
	S	M	EG	E	NS				
Grade Crossing Closure Study and Warning Device Installations (FRA)	X						Combination	Evaluate preventive approaches to the reduction of at-grade railroad crossing crashes	2005

APPENDIX A: Overview of Legislative Authorities of the Department of Transportation

Section 101 of Title 49 United States Code describes the United States Department of Transportation (DOT) purpose as follows:

> *The national objectives of general welfare, economic growth and stability, and security of the United States require the development of transportation policies and programs that contribute to providing fast, safe, efficient, and convenient transportation at the lowest cost consistent with those and other national objectives, including the efficient use and conservation of the resources of the United States.*

Set forth below is a summary of the legislative authorities that direct the various missions of the DOT.

- The Department of Transportation is established to develop and improve coordinated transportation service by cooperating with other federal, state and local governments to stimulate advances in transportation through research and development.
- The Secretary of Transportation, under the direction of the President, exercises leadership in transportation matters.
- The Department may investigate and decide whether an air carrier, foreign air carrier, or ticket agent has been or is engaged in an unfair or deceptive practice.
- The Department administers the Essential Air Services program that subsidizes small communities that otherwise would lose air services.
- The Department issues licenses to U.S. air carriers, and permits to foreign air carriers, which are required for their operations under the applicable transportation statutes.

The Operating administrations and Offices Within DOT

USCG

- Except in times of war, when the Coast Guard operates as a service in the Navy, the Coast Guard is a part of the Department of Transportation. The Secretary of Transportation exercises all duties and powers related to the Coast Guard vested in the Department.
- The Commandant is the Chief Executive of the Coast Guard. The Commandant reports directly to the Secretary.
- The Coast Guard enforces all applicable federal laws relating to the high seas and waters subject to the jurisdiction of the United States.
- The Coast Guard engages in maritime air surveillance or interdiction to enforce or assist in the enforcement of the laws of the United States and administers laws and regulations for the promotion of safety of life and property on the high seas and waters subject to the jurisdiction of the United States.
- The Coast Guard establishes electronic aids to navigation systems and aids to maritime navigation required to serve the needs of the armed forces or of the commerce of the United States.

- The Coast Guard administers the development of safety standards for commercial vessels, the licensing of crewmembers and the inspection of vessels to ensure compliance.
- The Coast Guard is responsible for a breadth of pollution prevention and response programs, including enforcement of the Oil Pollution Act of 1990.

FAA

- The FAA is headed by an Administrator, who is appointed by the President for a fixed term, and reports directly to the Secretary.
- The FAA promotes safe flight of civil aircraft in air commerce by prescribing standards for the design, material, construction, quality of work, and performance of aircraft, aircraft engines, and propellers.
- The FAA issues airman certificates, type certificates, production certificates, airworthiness certificates, air carrier operating certificates, airport operating certificates, air agency certificates, and air navigation facility certificates.
- The FAA is charged with developing and maintaining a safe and efficient nationwide system of public-use airports that meets the present and future needs of civil aeronautics.
- The FAA, through its commercial space transportation program, licenses launches of launch vehicles and the operation of non-federal launch sites within the United States and by U.S. citizens abroad.

FHWA

- The FHWA is headed by an Administrator, who is appointed by the President, and reports directly to the Secretary.
- The FHWA, through the Federal-Aid Highway Program, is charged with assisting states in improving their surface transportation systems. The primary focus of the federal-aid program is completion and expansion of the National Highway System, which provides an interconnected system of principal arterial routes which serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and major travel destinations.
- Through the Federal Lands Highway Program, the FHWA works with other federal agencies to plan and construct public lands highways, park roads and parkways, and Indian reservation roads.

FRA

- The FRA is headed by an Administrator, who is appointed by the President, and who reports directly to the Secretary.
- The FRA oversees our Nation's railroads, funds the rehabilitation of rail lines, and identifies and corrects unsafe conditions and practices.

NHTSA

- NHTSA is headed by an Administrator, who is appointed by the President, and who reports directly to the Secretary.
- NHTSA establishes automobile safety regulations, including crashworthiness standards and bumper standards, and consumer protection standards, including fuel efficiency standards and regulations relating to odometer settings.
- NHTSA carries out the duties and the powers of DOT to provide for aspects of highway safety, such as driver performance, other than highway safety design.

FTA

- The FTA is headed by an Administrator, who is appointed by the President, and reports directly to the Secretary.

- The FTA assists in the development, improvement and funding of mass transportation systems, equipment, facilities, techniques, and methods with the cooperation of public and private mass transportation companies.

SLSDC

- The Saint Lawrence Seaway Development Corporation is headed by an Administrator who is appointed by the President, and reports directly to the Secretary.
- The SLSDC was authorized to construct the Saint Lawrence Seaway, and to operate and maintain the seaway in coordination with the Saint Lawrence Seaway Authority of Canada.
- The SLSDC prescribes regulations and standards of competency to be met by SLSDC pilots for registration and sets rates and charges for pilotage services.

MARAD

- The Administrator of MARAD is appointed by the President, and reports directly to the Secretary.
- MARAD carries forth the congressional finding that it is necessary for the national defense and development of its foreign and domestic commerce that the United States shall have a merchant marine…sufficient to carry…a substantial portion of the waterborne export and import foreign commerce of the United States and to provide shipping service essential for maintaining the flow of such domestic and foreign waterborne commerce at all times…capable of serving as a naval and military auxiliary in time of war or national emergency.

RSPA

- RSPA is headed by an Administrator, who is appointed by the President, and who reports directly to the Secretary.
- RSPA regulates and enforces the safe transportation of hazardous materials.
- RSPA regulates and enforces the safety and environmental protection of pipeline transportation.
- RSPA is charged with coordinating emergency preparedness and response relating to transportation matters, including those matters affecting national defense and involving national or regional emergencies.
- RSPA provides coordination of multi-modal research functions in DOT and oversees a university transportation research program.
- RSPA carries out the duties and responsibilities assigned to the Volpe National Transportation Systems Center.

BTS

- The BTS is headed by a Director, who is appointed by the President, and who reports directly to the Secretary.
- The BTS is responsible for compiling, analyzing, and making accessible information about the Nation's transportation systems; collecting information on various aspects of transportation; and enhancing the quality and effectiveness of DOT's statistical programs.

FMCSA

- FMCSA is headed by an Administrator, who is appointed by the President, and who reports directly to the Secretary.
- FMCSA carries out duties and powers of DOT to provide for motor carrier safety.
- FMCSA manages program and regulatory activities, including administering laws and promulgating and enforcing regulations relating to motor carrier safety.

- FMCSA carries out motor carrier registration and authority to regulate household goods transportation.
- FMCSA develops strategies for improving commercial motor vehicle, operator and carrier safety.
- FMCSA inspects records and equipment of commercial motor carriers, investigates accidents and reports violations of motor carrier safety regulations.
- FMCSA carries out research, development and technology transfer activities to promote safety of operation and equipment of motor vehicles for the motor carrier transportation program.

LEGISLATIVE AUTHORITIES OF DOT

Office of the Secretary

Purpose

49 U.S.C. 101

"(a) The national objectives of general welfare, economic growth and stability, and security of the United States require the development of transportation policies and programs that contribute to provides fast, safe, efficient, and convenient transportation at the lowest cost consistent with those and other national objectives, including the efficient use and conservation of the resources of the United States.

(b) A Department of Transportation is necessary in the public interest and to –

(1) ensure the coordinated and effective administration of the transportation programs of the United States Government;
(2) make easier the development and improvement of coordinated transportation service to be provided by private enterprise to the greatest extent feasible;
(3) encourage cooperation of federal, state, and local governments, carriers, labor and other interested persons to achieve transportation objectives;
(4) stimulate technological advances in transportation, through research and development or otherwise;
(5) provide general leadership in identifying and solving transportation problems; and
(6) develop and recommend to the President and Congress transportation policies and programs to achieve transportation objectives considering the needs of the public, users, carriers, industry, labor and national defense."

Organization

49 U.S.C. 102

(Provides that the Department is an Executive Branch agency; provides for the appointment of the Secretary, Deputy Secretary, Associate Deputy Secretary, five Assistant Secretaries (one in the competitive service), and a General Counsel.)

Duties

49 U.S.C. 301

"The Secretary of Transportation shall –

(1) under the direction of the President, exercise leadership in transportation matters, including those matters affecting national defense and those matters involving national or regional emergencies;
(2) provide leadership in the development of transportation policies and programs, and make recommendations to the President and Congress for their consideration and implementation;
(3) coordinate federal policy on intermodal transportation and initiate policies to promote efficient intermodal transportation in the United States;
(4) promote and undertake the development, collection, and dissemination of technological, statistical, economic, and other information relevant to domestic and international transportation;
(5) consult and cooperate with the Secretary of Labor in compiling information regarding the status of labor-management contract and other labor-management problems and

in promoting industrial harmony and stable employment conditions in all modes of transportation;
(6) promote and undertake research and development related to transportation, including noise abatement, with particular attention to aircraft noise, and including basic highway vehicle science;
(7) consult with the heads of other departments, agencies and instrumentalities of the United States Government on the transportation requirements of the Government, including encouraging them to establish and observe policies consistent with maintaining a coordinated transportation system in procuring transportation or in operating their own transport services;
(8) consult and cooperate with state and local governments, carriers, labor, and other interested persons, including, when appropriate, holding informal public hearings; and
(9) develop and coordinate federal policy on financing transportation infrastructure, including the provision of direct federal credit assistance and other techniques used to leverage federal transportation funds.

49 U.S.C. 302
"(c) The Secretary shall consider the needs –
(1) for effectiveness and safety in the transportation systems; and
(2) of national defense
(d) (1) it is the policy of the United States to promote the construction and commercialization of high-speed ground transportation systems by –
(A) conducting economic and technological research;
(B) demonstrating advancements in high-speed ground transportation technologies;
(C) establishing a comprehensive policy for the development of such systems and the effective integration of the various high-speed ground transportation technologies; and
(D) minimizing the long-term risks of investors.

(2) It is the policy of the United States to establish in the shortest time practicable a United States designed and constructed magnetic levitation transportation technology capable of operating along federal-aid highway rights-of-way, as part of a national transportation system of the United States.

(e) Intermodal Transportation – It is the policy of the United States Government to encourage and promote development of a national intermodal transportation system in the United States to move people and goods in an energy-efficient manner, provide the foundation for improved productivity growth, strengthened the Nation's ability to compete in the global economy, and obtain the optimum yield from the Nation's transportation resources."

Intermodalism

49 U.S.C. 5501
National Intermodal Transportation System policy
"(a) General. It is the policy of the United States Government to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the United States to compete in the global economy, and will move individuals and property in an energy efficient way.
(b) System characteristics.
(1) The National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner, including the transportation systems

of the future, to reduce energy consumption and air pollution while promoting economic development and supporting the United States' preeminent position in international commerce…."

49 U.S.C. 41310
(Authorizes Secretary to resolve international unfair competitive practices complaints.)

49 U.S.C. 41501, et seq.
(Authorizes Secretary to regulate pricing in foreign air transportation.)

APPENDIX B: Future Authorizations

The following table presents future reauthorizations for the individual operating administrations within the department.

Table B.1 Future Authorizations of DOT Programs

Operating Administration	Name of Law	Last/Future Authorization
United States Coast Guard	Coast Guard Authorization act of 1998 P.L. 105 – 383	Through FY 1999
	Coast Guard Authorization Act of 2000 H.R. 820 (pending)	Through FY 2001
	S. 1089 (pending)	Through FY 2001
Federal Aviation Administration	Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21)	Through FY 2003
	FAA RE&D or Commercial Space Transportation	Through FY 2002
	Aviation Insurance Program	CY 2003
Federal Highway Administration	Transportation Equity Act (TEA-21)	Through October 1, 2003
Federal Motor Carrier Safety Administration	Transportation Equity Act (TEA-21)	Through September 30, 2003
	P.L. 105-178	
	Motor Carrier Safety Improvement Act of 1999	
National Highway Safety Administration	Transportation Equity Act (TEA-21)	Through September 30, 2003

Table B.1 Future Authorizations of DOT Programs *(continued)*		
Operating Administration	**Name of Law**	**Last/Future Authorization**
Federal Railroad Administration	Federal Railroad Safety Enhancement Act of 1999 H.R. 2683; S. 1496	Expired in 1998; this legislation submitted would reauthorize the entire federal railroad safety program for FY 2000-2003
Federal Transit Administration	Transportation Equity Act (TEA-21)	Through September 30, 2003
Maritime Administration	Maritime Security Act of 1996 P.L. 104-239	Through FY 2005
Research and Special Programs Administration	Federal Hazardous Materials Transportation Law	Expired in 1998; if passed reauthorizations for RSPA's hazmat safety program for FY 2001-2005
St. Lawrence Seaway Development Corporation	Section 210 of the "Water Resources Development Act of 1986", P.L. 99-662	This a permanent authorization without an expiration date
Surface Transportation Board	Surface Transportation Board Reauthorization Act of 1999 H.R. 3163 49 U.S.C. 705	This legislation (submitted 10/15/99) would reauthorize the STB for fiscal year 2001.
Bureau of Transportation Statistics	Transportation Equity Act (TEA-21)	Through October 1, 2003

APPENDIX C: Consultation And Participation: The Planning Process

The Department of Transportation developed its Strategic Plan for FY 2000 – 2005 through a distinctive process utilizing innovative tools for future thinking, outreach and participative planning. Coordination and consultation occurred within the Department directly involving both headquarters and field staff; with other federal, state, and local agencies; the Congress and a vast number of consumers, providers and interest groups within the transportation enterprise. The deliberate and inclusive methods employed by DOT to locate, listen to and involve its customers and stakeholders are reviewed below.

Customer, Stakeholder and Cross-Agency Participation

The Department employed three major assumptions in the strategic planning process. First, the strategic plan must be based on accurate, timely and complete information. Second, customers and stakeholders are a driving force behind that information. Third, the greater the information that can be obtained from a diversity of sources, the greater the opportunity to effect improvement. Therefore, literally hundreds of customers and stakeholders were actively involved at various stages in the strategic planning process.

We began the planning process by forming a ONE DOT team composed of a representative from each of our staff offices and operating administrations. Once the team was formed, we proceeded through a series of discussions on how the 1997-2002 plan could be improved. We considered topics such as the relationship of the strategic plan to the performance plan; how the results of program evaluation would be incorporated into the planning process and management challenges. For example, staff from the General Accounting Office, DOT's Office of the Inspector General and the Office of Management and Budget provided suggestions in person to our strategic planning team in the summer of 1999. During September, October and November 1999, we held a series of strategy sessions to actually begin to write the plan. Members of the transportation industry, labor unions, special interest groups, trade organizations, and federal partners worked side-by-side with DOT staff in intensive working sessions to develop goals and strategies. All of the consultations helped to strengthen and shape the Strategic Plan. Indeed, the ONE DOT Strategic Planning Team welcomed, appreciated the effort, and was able to reach consensus on the majority of views expressed by our diverse group of stakeholders. Several stakeholders wrote to the Secretary thanking him for inviting them to take part in the planning process. We published our first, incomplete draft on the internet in December 1999 and asked for comments.

Reaching Out

Secretary Slater has reached out to our constituents and customers, identifying the challenges we face and building coalitions with them in a series of visioning sessions held across the country in a variety of venues as illustrated below.

- DOT convened the first ever National Transportation Safety Conference in March 1999 to advance President Clinton's top transportation priority, safety.
- Continuing the "Safer Skies for Africa" Initiative, part of our broader Transportation Initiative with Africa, Secretary Slater spoke to the "Global Summit on Building the African

Economy" about the importance of transportation; Secretary Slater also hosted more than 40 countries at an Africa Transportation Ministerial in Atlanta.

- In October, to support President Clinton's call for "an efficient, safe and well integrated transportation system" for the Western Hemisphere, Secretary Slater led a mission to promote technology and encourage trade in South America.
- DOT hosted December's "Aviation in the 21st Century—Beyond Open Skies" conference in Chicago, attended by 93 nations, which supported a vision of a liberalized aviation system that benefits economies, enhances safety and security and improves service for customers and shippers.
- Continuing a tradition he began in 1994, Secretary Slater conducted his annual Intermodal Tour in April 2000. Secretary Slater visited 15 cities in 12 states beginning at the Rio Grande and ending two weeks later at the St Lawrence Seaway.
- To ensure that the views of all stakeholders are reflected as we develop a policy architecture for transportation decision-making, Secretary Slater is hosting a series of 2025 Visioning Sessions. These sessions, which look forward 25 years, are currently under way around the country, and focus on the future of transportation and such topics as the auto industry's workforce and the future of new entrant airlines.

Congressional Consultation

As required by the Government Performance and Results Act, the Department actively sought Congressional consultation in the various stages of development of the strategic plan. Deputy Secretary of Transportation Mortimer L. Downey wrote letters soliciting comments on the draft strategic plan to Chairs and Ranking Members of all House and Senate committees that authorize, oversee and appropriate funds for DOT programs. As a result, DOT staff held several consultations with Congressional staff on various aspects of the plan. Some members of Congress wrote letters to the Secretary and the Deputy expressing their views. All of the Congressional views were helpful in shaping the content of the plan. There were no contrary views expressed.

Future Scenarios

Future scenarios were developed and used for the first time by the Department as an innovative tool to analyze and view the transportation enterprise thirty years into future. They were intended to stretch thinking and generate discussion in the development of a more vigorous strategic plan.

Future scenarios are not forecasts, but are based on the concept that the future is uncertain and cannot be dealt with in a linear way or with single point forecasts. The Department's scenarios defined plausible and logically consistent stories of how the future might unfold with regard to the transportation enterprise. The scenarios allowed participants to think about and prepare for a wide range of realistic future possibilities within the constraints of 1) the economy, 2) globalization, 3) the role of government, and 4) demand for change in transportation.

Hundreds of individuals representing the full spectrum of transportation providers, consumers and partners were actively involved at various stages in the scenario development by way of interviews, thinkers breakfasts with the Secretary and the Deputy Secretary, leadership roundtables, and workshops. The scenarios were also used in the actual strategic planning sessions as a device for strategy development. The participants included customers and stakeholders from across the transportation enterprise and government, again numbering in the hundreds. Data generated as a result of the scenarios during the planning sessions also contributed to the development of other sections in the strategic plan, such as the External Factors sections.

Internet Consultations and Comment

The Department's Internet posting of the draft strategic plan was intended to expand the strategic planning process to those individuals and organizations who have not customarily had direct access to the Department. This outreach generated an abundance of comments from private citizens, special interest groups, trade associations, state and local partners, and industry. Congressional stakeholders and federal partners also utilized the web site to provide their comments.

Nearly fifty percent of the hits on the DOT home page, subsequently visited the strategic plan comment site, and approximately ten percent of those individuals took the time to comment. Links to the other operating administrations' and departmental offices' home pages were also created and enabled additional comments. As a result of the Internet remarks, several significant strategies and perspectives were added to the Strategic Plan. Notable among the comments was nation-wide interest from bicyclists who correctly observed that early drafts of the plan did not include bicycle and pedestrian travel.

APPENDIX D: Communication and Roll-Out of the Strategic Plan

The overall framework for communicating and implementing the FY 2000 –2005 Strategic Plan operates under several key assumptions:

- The inclusive and innovative approach to the development of the plan must extend to roll out and ongoing communication efforts;
- Accountability for fulfilling commitments and achieving goals should be articulated throughout the organization and at all levels; and
- Alignment of the annual performance plan, budget, other departmental strategic plans and performance agreements are necessary to the successful implementation of the strategic plan and should be reinforced.

Communication of the Strategic Plan

Roll-Out

We will use a variety of techniques to communicate our safety, mobility, economic growth, human and natural environment, national security, and organizational excellence goals to our employees, other federal, state and local partners, our customers and stakeholders. Secretary Slater and Deputy Secretary Downey will introduce the strategic plan at a September open-air event scheduled exclusively for this purpose. Operating Administrators, other senior leadership and all DOT employees will be invited to attend along with Congressional, industry and labor customers and stakeholders. Printed copies of the complete strategic plan and mission cards will be available at this event. The plan will be posted on DOT's web site and we will have TV coverage of the event for future airing.

Education

A Power Point presentation illustrating the strategic plan will be distributed to all Staff Offices and Operating Administrations to assist in educating DOT employees about the plan and how their specific jobs support it. This will encourage the Department's workforce to be creative and confident in developing new ways of doing business that will help us achieve the goals.

E-Government

We will maintain the strategic plan on the Internet via its own web site linked to the Department's home page but will add some improved features. The DOT Strategic Plan web site will contain not only the most updated version of the document but will also provide access to information on the tools (Future Scenarios) and processes involved in the development of the plan. And, so as not miss an opportunity to be Visionary and Vigilant, there will also be a place on the web site for customers and stakeholders to advise the Department on future transportation trends so that we might keep the future scenarios current.

Speeches and Public Appearances

The Department will stay on message in public appearances and discuss the strategic goals and outcomes with our customers and stakeholders at every opportunity. The strategic planning staff will hold weekly, open brown bag lunches to discuss how the plan was built, how it differs from the 1997-2002 plan and how the people of DOT support the plan.

Implementation of the Strategic Plan

Incentives

The Department of Transportation believes in finding the good and praising it. Thus, we will be proactive in identifying and rewarding employee contributions that help us fulfill our mission and achieve our goals. Indeed, the DOT awards and recognition programs require that the employee and team contributions support the mission and goals of the Department. Secretary Slater personally recognizes employees who make exceptional contributions to the Department. Since our workforce is our most valuable asset, providing highly visible and frequent incentives to our staff not only improves morale and increases the likelihood of our achieving our goals, and becomes one more means by which employees will understand and utilize the strategic plan.

Accountability

Each year the Department's Assistant Secretaries, Operating Administrators, and Office Directors have signed Annual Performance Agreements with the Secretary. These agreements parallel the structure of the goals in the strategic plan. They contain annual performance goals and describe projects and program initiatives that support each strategic goal. The Deputy Secretary tracks progress against the milestones in the agreements via monthly meetings with these officials. We will continue this practice of holding our leadership accountable for the achievement of our strategic goals into the future through this process. Performance Agreements will continue to be revised and updated annually from the Performance Plan submitted with the proposed budget for that year.

Similarly, we will hold managers accountable for achieving our strategic goals through the Departments Performance Management framework that contains standards linked to each of the strategic goals. In this manner, we will reward our workforce for accomplishing the goals in our strategic plan.

Budget Process

Finally, we will continue to reinforce the goals and strategies in our Strategic Plan via the annual budget process to tie resources to results. We will continue to evaluate budget requests and allocate resources to those programs and activities that best help us achieve our five strategic goals.

- DOT will continue to use program evaluation to understand and quantify the degree of influence our activities exert on strategic outcomes. We will use these evaluations to determine the resource allocation and strategies that achieve maximum results.
- DOT will continue to encourage management for results throughout the Department, fostering the development of measures that assist modes in managing their activities and in developing resource requests that advance common DOT strategic goals.
- DOT will ensure that new initiatives proposed in the annual budget process identify performance indicators and data sources and clearly support the strategic goals put forward in this document.
- DOT will not use performance measures alone to make budget decisions, but will continue to use a broad range of analytic tools along with performance measures to best allocate resources and advance strategic goals.